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OF THE

ROYAL ANTHROPOLOGICAL INSTITUTE

OF

16612

GREAT BRITAIN AND IRELAND.



VOL. XL.

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NOTICE.

For convenience of reference, all volumes of the new (imperial octavo) series which began in 1898 are numbered in continuation of the old demy octavo series Vols. I-XXVII. Thus Vol. I of the imperial octavo series=Vol. XXVIII of the old series; and the present Vol. XL corresponds to N.S. Vol. XIII.

The Index to the present volume includes an index to the Institute's monthly publication MAN for the year of issue 1910.

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JOURNAL

OF THE

ROYAL ANTHROPOLOGICAL INSTITUTE

OF GREAT BRITAIN AND IRELAND.

MINUTES OF THE ANNUAL GENERAL MEETING.

JANUARY 25TH, 1910.

Professor W. RIDGEWAY, M.A., Sc.D., F.B.A., *President, in the Chair.*

The Minutes of the last Annual General Meeting were read and carried.

The PRESIDENT appointed Dr. WRIGHT and Mr. E. TORDAY Scrutineers, and declared the ballot open.

The PRESIDENT announced the election of Dr. E. DURKHEIM and Professor E. SELER as Honorary Fellows of the Institute.

The SECRETARY read the Report of the Council for 1909, which, on the motion of the PRESIDENT, seconded by Mr. H. BALFOUR, was adopted unanimously (p. 2).

The TREASURER read his Report for 1909, which, on the motion of the PRESIDENT, seconded by Mr. A. L. LEWIS, was adopted unanimously (p. 6).

The PRESIDENT delivered his address, entitled "The Influence of Environment on Man" (p. 10).

A vote of thanks to the President was proposed by Mr. F. W. RUDLER, I.S.O.,
Vol. XL.

who asked, in the name of the Institute, that the President would permit his address to be printed in the *Journal*.

The motion was seconded by Mr. H. BALFOUR, and carried by acclamation.

The SCRUTINEERS then handed in their Report, and the following were declared to be duly elected as Officers and Council for the year 1910-11:—

President.—Sir Herbert H. Risley, K.C.I.E., C.S.I.

Vice-Presidents.

A. J. Evans, Esq., M.A., D.Litt., F.R.S., F.B.A.	Sir R. B. Martin, Bart., M.A. Professor A. Thomson, M.A., M.B.
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Hon. Secretary.—T. A. Joyce, Esq., M.A.

Hon. Treasurer.—J. Gray, Esq., B.Sc.

Council.

W. Crooke, Esq., B.A. O. M. Dalton, Esq., M.A., F.S.A. J. Edge-Partington, Esq. R. J. Gladstone, Esq., M.D. H. S. Harrison, Esq., D.Sc. T. C. Hodson, Esq. Sir H. H. Johnston, G.C.M.G., K.C.B. A. Keith, Esq., M.D. A. L. Lewis, Esq., F.C.A. W. McDougall, Esq., M.A. R. R. Marett, Esq., M.A.	A. P. Maudslay, Esq. F. G. Parsons, Esq., F.R.C.S. R. H. Pye, Esq. S. H. Ray, Esq., M.A. Professor Carveth Read, M.A. W. H. R. Rivers, Esq., M.A., M.D., F.R.S. C. G. Seligmann, Esq., M.D. W. W. Skeat, Esq., M.A. Sir R. C. Temple, Bart., C.I.E.
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REPORT OF THE COUNCIL FOR 1909.

The Council is happy to report a year of substantial progress, and is pleased to record the fact that 41 new fellows have been elected, a total only once before equalled in the past, namely in 1906. The total membership therefore now stands at the record figure of 512.

The numerical gains and losses of the Institute are expressed in the following table:—

	Honorary Fellows.	Corresponding Fellows.	Local Correspondents.	Affiliated Societies.	Members of Affiliated Societies.	Ordinary Fellows.		Total Ordinary.	Total Membership.
						Compound- ing.	Subscrib- ing.		
1 Jan., 1909 ...	41	5	36	—	—	81	332	413	495
Less by death or resignation.	-3	—	—	—	—	-3	-27	-30	-33
Since elected ...	+3	—	+4	+1	+1	—	+41	+41	+50
1 Jan., 1910 ...	41	5	40 ¹	1	1	78	346	424	512

¹ Of these 13 are also Ordinary Fellows.

Among the losses which the Institute has suffered through death are Professor Giglioli, Professor Lombroso and Dr. Schmeltz, Honorary Fellows, and Lord Ripon, Lord Amherst of Hackney, Messrs. E. M. Andrews, J. B. Andrews, R. C. Benington, O. J. Crawford, Professor D. J. Cunningham, Mr. C. Czarnikow, Dr. Sebastian Evans, Professor A. Fraser, General Kincaid, Herr R. Parkinson, Messrs. F. G. Hilton-Price, W. F. Stanley, and Miss Wolfe.

Professor Giglioli, the well-known ethnologist and collector of stone implements, died on December 16th. He was born in London in 1845, and eventually became Professor first at Pisa, and subsequently at Florence. He was elected an honorary fellow in 1892, and his loss will be greatly felt by ethnographers in this country, especially by those who knew his genial character.

Professor Lombroso was best known as a student of criminology, and had occupied chairs at the University of Pavia, and at Turin. He also was elected an honorary fellow of the Institute in 1892.

Dr. J. D. E. Schmeltz, who was also elected an honorary fellow in that year, died in May. His connection with the Leiden Ethnographical Museum dated from ten years earlier. He was a prolific writer and the founder of the *Internationales Archiv für Ethnographie*.

In Lord Ripon the Institute has lost its senior fellow, as he became a member of the Ethnological Society in 1850.

By the death of Professor Cunningham, who so recently occupied the Presidential chair, the Institute has lost one of its most distinguished fellows. An obituary notice appeared in *Man*, 1909, 62, but the Council desire once more to offer a tribute to his memory.

Professor A. Fraser occupied the anatomical chair of the Royal College of Surgeons, Dublin.

Mr. F. G. Hilton-Price had served the Institute as Honorary Treasurer, and was well known as an Egyptologist and a collector of antiquities.

In Mr. E. M. Andrews, the Institute has lost an energetic worker in the field. He had carried on important investigations in connection with the ruins in South Africa, and was engaged on similar work at the time of his death.

Miss Wolfe had been a fellow since 1881, and the living interest which she took in Anthropology is proved by the generous bequest to which reference is made below.

Herr R. Parkinson, well known for his writings on the Bismarck Archipelago, died in July. He had been a fellow of the Institute since 1897, and in him Germany loses one of her most active field workers.

Fellows of the Institute will also regret the loss of the following travellers and men of science, whose researches have done much to further the study of anthropology :—

Dr. T. Achelis, born in Gropelingen in 1850, died in June. He was a student of wide interests, and had made considerable contributions to ethnology, psychology, sociology and the study of comparative religions. He was also well known as the founder of the *Archiv für Religionswissenschaft*.

Dr. R. Needham Cust has already been noted in *Man*. His contributions to philology, particularly his accounts of the modern languages of India and Africa, are worthy memorials of a life devoted to the study of linguistics.

The Field Museum at Chicago has experienced a loss in the person of Dr. William Jones, who was murdered in the Philippines in March. Dr. Jones was only 35 years old at the time of his death, and was on one side of Indian (Shawnee) extraction. He had made important investigations in the religious customs of the Indians.

Fraülein Johanna Mestorf, who may be regarded as one of the founders of the Kiel Museum, died at Kiel in July. She bore a great reputation as an archæologist, and her labours were rewarded, amongst other honours, by an honorary doctorate at Kiel University.

Herr Arno Semfft was one of the pioneers of German colonisation in the Western Pacific, and had made many contributions to literature on the ethnography, principally, of the Caroline Islands.

By the deaths of Major Cecil Murphy and Mr. A. J. Mounteney Jephson are lost two links with a most important period of African exploration. Major Murphy, it will be remembered, was one of the party who brought the body of Livingstone to the coast, and Mr. Jephson was a member of the famous expedition led by Stanley to relieve Emin Pasha.

MEETINGS.

During the year ending December 31st, 1909, twelve ordinary meetings were held. At these 15 papers were read, 7 dealing with archæological, 5 with

ethnographical, and 3 with physical subjects. Six exhibitions of specimens were also made.

HUXLEY MEMORIAL LECTURE.

The Huxley Memorial Lecture was delivered by Professor Gustaf Retzius, Honorary Fellow of the Institute, on November 13th. The title of the lecture was "The North European Race." At the conclusion of the proceedings the President presented to Professor Retzius the Huxley Memorial Medal in recognition of his eminent services to anthropology.

PUBLICATIONS.

During the year two half-yearly parts of the *Journal* have been issued, viz., Vol. XXXVIII, 2 (July–December, 1908) and XXXIX, 1 (January–June, 1909). Of the first 113 copies have been sold, of the latter 85. The first of these figures is greater than the corresponding figure for last year; the latter though smaller does not afford a fair criterion of the circulation, owing to the fact that several outstanding accounts were not settled until this January. If these be taken into consideration, the sales are equivalent to the record established last year.

With regard to *Man*, the usual twelve monthly parts have been issued. The subscriptions show an advance of £18 upon last year. The sales appear less, owing to the non-payment at the end of the year of an outstanding account. The Council is pleased to report that during this year, *Man* came within £10 of paying its own expenses. Owing to the expenses incurred by the removal to new premises, the Council recommend that the existing system of subscription be maintained for another year.

LIBRARY.

The number of accessions to the Library, while just falling short of last year's record, is nevertheless in advance of that of 1907. The exchange list has been increased by the addition of two British and five foreign periodicals.

EXTERNAL.

A deputation waited upon the Prime Minister in support of the memorial presented to the Government last year. Though the Prime Minister was sympathetic, the Government have not yet been induced to take action in the direction advocated in the memorial.

BEQUEST.

Under the will of the late Miss Sarah Wolfe, fellow of the R.A.I., the Institute has received the generous bequest of £1,000. The Council of the Institute have recommended the purchase of an Epidiascope lantern as a memorial of their benefactor, and the investment of the rest of the legacy.

REMOVAL.

Owing to the approaching demolition of the premises rented from the Zoological Society, at 3, Hanover Square, the Institute has been compelled to seek other quarters. A suite of rooms at 50, Great Russell Street, was selected by the Council, and the removal was accomplished in the second week of October.

TREASURER'S REPORT FOR THE YEAR 1909.

On the 31st December, 1909, the assets of the Institute were as follows:—

	£	s.	d.	£	s.	d.
<i>Assets (not immediately realisable):—</i>						
Books in Library, Publications, Furniture as per estimate of 1903 ...				885	0	0

Realisable Assets:—

£300 Metropolitan Consolidated 3½ per cent. Stock, present value ...	...	303	0	0		
Balance at Bank ...	...	238	8	7		
Deposit at Bank ...	...	1,000	0	0		
Petty cash ...	...	1	14	9		
Arrears of subscriptions, £109 4s. 0d. valued at ...	...	50	10	0		
					1,593	13 4
Total Assets					£2,478	13 4

Against which there are liabilities:—

	£	s.	d.
Anthropological Notes and Queries ...	68	4	8
Library Fund ...	1	2	8
			69 7 4

Leaving a surplus, if all property were realised,
of ... £2,409 6 0

Considering only our immediately realisable assets:—

	£	s.	d.
These amount to ...	1,593	13	4
Less ...	69	7	4
	£1,524	6	0

The state of ideal solvency also implies the following additional liabilities :—

	£	s.	d.
<i>Journal</i> (1909)	250	0	0
<i>Man</i> (November, December)	25	0	0
Unexpended life subscriptions	393	0	0
Total	£668	0	0
Our immediately realisable surplus is	1,524	6	0
Showing a surplus in our Reserve Fund of ..	£856	6	0

THE FINANCIAL POSITION OF THE INSTITUTE.

The Institute has been fortunate in receiving this year a legacy of £1,000 from the executors of the late Miss Wolfe. This, for the first time, places an ample reserve fund at the disposal of the Institute, and will enable any schemes for the improvement of our efficiency to be carried out at once, instead of waiting for the slower development of our ordinary resources.

The total ordinary receipts of the Institute are £1 less than last year.

The receipts from annual subscriptions are £29 more, and no Life subscriptions were received this year.

The receipts from the sale of the *Journals* are £11 less, and from the sale of *Man* £15 more than last year.

The total expenditure this year is £230 more, which is chiefly accounted for by two exceptional items, namely, the cost of installing and maintaining an exhibit and an anthropometric bureau at the Imperial International Exhibition and the cost of removing to, and fitting up and furnishing, the new premises of the Institute.

The grant to the Library was raised this year from £10 to £30.

A deputation to the Prime Minister asked for an annual grant to the Institute of £500 to establish an Imperial Bureau of Anthropology. The important work which it was proposed to carry out if our application had been successful still remains in abeyance.

J. GRAY, *Hon. Treasurer.*

OF GREAT BRITAIN AND IRELAND.

for the Year 1909.

PAYMENTS.				£	s.	d.	£	s.	d.	£	s.	d.
RENT										135	0	0
JOURNAL							329	11	0			
Less refunds							20	0	0			
										309	11	0
ADVERTISING										10	19	1
"MAN":—												
Printing and blocks				183	8	3						
Less refunds					5	7	6					
										178	0	9
Postage, etc.							20	16	3			
										198	17	0
SALARIES										133	8	0
HOUSEKEEPING										24	15	0
STAMPS AND PARCELS										50	1	7
PRINTING AND STATIONERY.....										48	5	7
LANTERN.....										4	2	3
INSURANCE										3	9	5
TRAVELLING										2	16	11
GRANT TO LIBRARY										30	0	0
HUXLEY MEDAL AND LECTURE.....										1	12	6
HOBLEY'S "UGANDA":—												
Balance as per contra							26	8	7			
Less received in 1909							1	18	0			
										24	10	7
"PHYSICAL DETERIORATION":—												
Balance as per contra							7	18	8			
Less received 1909.....								4	6			
										7	14	2
BIBLIOGRAPHY:—												
Balance as per contra							55	5	4			
Less received 1909							2	6	4			
										52	19	0
REPORT OF THE ANTHROPOMETRIC COMMITTEE										14	0	0
EXHIBITION EXPENSES										55	18	11
REMOVING TO AND FITTING OUT NEW PREMISES										55	13	10
TELEPHONE										7	10	0
LEGAL EXPENSES										18	14	1
TYPEWRITER AND TYPEWRITING										6	10	5
SUNDRIES										27	10	4
BALANCE at Bank							238	8	7			
DEPOSIT at Bank							1,000	0	0			
PETTY CASH								1	14	9		
										1,240	3	4

£2,464 3 0

J. GRAY,
Honorary Treasurer.

PRESIDENTIAL ADDRESS.

THE INFLUENCE OF ENVIRONMENT ON MAN.

BY PROFESSOR WILLIAM RIDGEWAY, SC.D., F.B.A., HON. LL.D., HON. LITT.D.

IN this my concluding address, my first and most pleasing duty is to offer my heartiest thanks to the Officers and Council for their unfailing kindness and consideration for my shortcomings and for their unflagging loyalty during my two years of office. Indeed, had I not known beforehand the remarkable qualities of the Secretary, Treasurer, and Assistant Secretary, I would not have undertaken the responsibility of presiding over the Institute.

It may not be out of place to review briefly the progress made by the Institute during the last two years. The story, I rejoice to say, is one of continued prosperity and progress, alike in point of numbers and financial stability. The sum of one thousand pounds, bequeathed to us by the late Miss Wolfe, has not only given us a substantial nucleus for a reserve and special grant fund, but it indicates that the general public are awaking to the great importance of Anthropology. My optimism is confirmed by the large donations as well as by the legacy of five thousand pounds recently received by Cambridge for the erection of a new Anthropological Museum.

In view of these symptoms of a growing interest in our special science we must not regret the expenditure incurred in promoting the proposal for the establishment of an Imperial Bureau of Anthropology within this Institute, the main part of our outlay having been incurred in an effort to obtain the modest grant of five hundred pounds per annum from the Chancellor of the Exchequer. Though we have failed in our first attempt upon the coffers of the Treasury, as has been the almost universal experience of those who later on have succeeded in their demand, we must not consider that our efforts have been wholly barren. The circulation of our memorial, to which were appended the signatures of a long array of the most distinguished Indian and Colonial administrators, had the all-important result of eliciting the public enunciation from the Prime Minister that the time had now come when a knowledge of Anthropology "must form part of the normal equipment of those who in the Consular, Indian, and Colonial services, have to carry on the work of the Empire, especially in its outlying parts." But this was not all. The reception of our deputation by the Prime

Minister brought under the notice of many other Ministers, ex-Ministers, and great officials, the fact that Anthropology must now be regarded as an applied science, and that henceforward it must be recognised as an important instrument for carrying on the business of the State. Nor did the effect produced by our memorial end even here. The demonstration of the practical utility of Anthropology not only for administrative but also for commercial purposes and the fact that many leading shipowners, manufacturers, and traders had endorsed our opinion, caught hold upon the great business centres of the kingdom. All the leading newspapers in Liverpool, Manchester, and Birmingham took up the matter seriously and warmly, and not only did they publish long and important articles on our project and our deputation at the time, but have continued to refer to our doctrines at various intervals since. In India and in the Crown Colonies the greatest interest in our effort was and is being taken by leading administrators. I need give you no better proof of this than when I tell you that last year the Government of India recommended an annual grant of one hundred pounds for five years to the Institute for the purpose of our proposed Bureau, and that the Government of British East Africa made a recommendation of fifty pounds per annum for the same purpose. I regret to say that Lord Morley in the one case, and Lord Crewe in the other, did not sanction the recommendations of the officials engaged in the active work of administration, and who are best qualified to judge of the practical needs of their subordinates.

The facts which I have briefly sketched all point to the conclusion that what we now want is to continue steadfast in our determination to accomplish our end, and on every opportunity to bring influence to bear on the Ministers of the Crown. This of course must be carried on principally through members of Parliament, and here I must express our deep obligations to those members on both sides of the House of Commons, Sir W. Anson, Mr. S. H. Butcher, Mr. Annan Bryce, and Mr. Russell Rea, for their generous aid in furthering the object of our memorial. Mr. Rea has especial claims upon our gratitude, for he not only made all the arrangements with the Prime Minister for the reception of our deputation, but continued afterwards to make further efforts to extract a grant from the Chancellor of the Exchequer. All of us, no matter what our politics may be, sincerely regret that a man like Mr. Rea, with broad and enlightened views, should have lost his seat at the recent elections. Personally I hope before long he may find another constituency. It is the duty of every Fellow of the Institute to bring all the influence that he or she can to bear upon officials and especially on members of Parliament, for it is only by the exertion of pressure upon the Treasury of men with votes that we hope ultimately to obtain our grant. Ministers are just as susceptible to the influence of environment as everything else in Nature, and it must be our duty to see that their environment shall be made as healthy as possible. The action of a proper environment upon Ministers of the Crown naturally leads me to the general question of the influence of Environment on Man in general.

In my address to the Anthropology section of the British Association in 1908, I attempted to show that many of the chief errors which impede the scientific study of man, which lead to the maladministration of alien races, and which beget blunders of the gravest issue in our own social legislation, are due in no small degree to man's pride in shutting his eyes to the fact that he is controlled by the same laws as the rest of the animal kingdom. My arguments excited considerable discussion both at the time and since in this country, on the Continent and in America, but only one systematic attempt to refute my doctrines has been attempted. I refer to an article by Mr. Bernard Houghton, of the Indian Civil Service, in *Science Progress* for October, 1909. To-night I intend only to deal with one of the three aspects of which I treated at the British Association, and to confine myself to inquiring how far the physical side of Man is liable to modification by his environment. With the criticisms of Mr. Houghton on the other aspects of my address I will deal in *Science Progress*.¹ By environment, as I carefully explained in my address at the British Association, I mean all the conditions under which men live and which of course vary widely on different parts of the globe.

Foremost in importance amongst the problems relating to Man now being discussed by physical anthropologists, is the stratification of populations in Europe. It had generally been held before I wrote, as an article of faith, that Europe was first peopled by a non-Aryan race. Of course it is difficult for us to say what were the physical characteristics of Palæolithic Man, for apart from a certain number of skulls our evidence concerning him is entirely confined to his implements of flint found in the river gravels, caves and high plateaux.

But when we come to Neolithic Man the problem becomes less hopeless. It had been generally held that the first Neolithic men in Europe, whether they were descended or not from their Palæolithic predecessors, had long skulls, but were not Aryans; that later on came a migration of short-skulled people from Asia who passed along Central Europe into France, becoming what is commonly termed the Alpine, by some the Ligurian, by others the Celtic race. Later these two primitive non-Aryan races are supposed to have been overrun by the Aryans, who, when these theories were first started, were universally considered to have come from the Hindu Kush, but are now generally believed to have originated in Upper Central Europe. The Aryans are generally assumed to have had a blonde complexion.

In my *Early Age of Greece*, I had refused to regard the short-skulled Alpine race as differing materially from the dark long-headed melanochrous race found in Italy, Greece and Spain, and on the other hand from the blonde race of Northern Europe. At the York Meeting of the British Association in 1906, I urged that the Alpine race was in no sense Mongoloid and that its short skull was due to modification along the Alps. In other words, that the brachycephalic European race was of European, and not of Asiatic origin.

¹ This article has now appeared in *Science Progress* (July, 1910).

This view was later on supported by Professor W. Wright in the Hunterian Lectures, whilst it was strongly expressed by Professor Gustav Retzius in this very place when he delivered a few weeks ago his Huxley Memorial lecture. I may further add that in the recent publication of the Danish Anthropological Committee Dr. Soren Hansen has drawn the conclusion from the very complete data furnished by the Anthropological Survey of Denmark that the old doctrine with which the Danish investigators started that the population of Denmark consisted of two distinct elements (1) a tall blonde race with long skull, and (2) a short dark race with short skull—must be rejected. The evidence points rather to a shading off from the dark short type into the tall blonde type.

In my address I maintained, as also in a monograph ("Who were the Romans?" *British Academy*, 1907) published some time earlier, that the blonde tall race of Upper Europe was identical in origin with that small dark long-headed race of the three southern peninsulas of Europe, generally included up to then under the name of "Mediterranean Race" with the Hamites of North Africa and the Semites of South-western Asia.

My argument was, and is, that as the ice-sheet receded Man passed upwards from the south or south-east into Europe and settled in the three southern peninsulas, gradually spreading northwards over the Alps and extending eventually up to the Baltic. As they gradually spread upwards under the influence of their environment (and in environment, I of course include food), they grew less dark, those of them who settled permanently along the axis of the Alps tending to have shorter skulls, whilst those who had passed onwards earliest became the most blonde and tallest people in the world. On the other hand I revolted from Sergi's doctrine of a Mediterranean Race which comprised Hamites and Semites as well as those speaking an Aryan language. I pointed out that the evidence for the dark races of Greece, Italy and Spain having always spoken an Aryan language is very weighty, and that Sergi has simply assumed that similarity of physical type means identity of race. I maintained that the similarity between the populations of Greece, Italy, Spain and parts of France, and the British Isles to the Hamites and Semites is simply due to convergence of physical types under similar conditions, instancing various analogies from the lower animals.

As the discussion had of necessity to deal with questions of race, I examined in my address (p. 2), the criteria by which anthropologists distinguish one race from another. These are (1) pigmentation (colour of the skin, hair and eyes); (2) the shape of the skull and other osteological characteristics; (3) the system of descent. I added that formerly language had been included in the tests of race, but when it was pointed out that the negroes of Jamaica speak English, those of Louisiana French, it was thenceforward assumed that one race can embrace the language of another with the greatest ease. Yet it may turn out after all that language was too hastily expelled from the criteria of race. On the other hand, further investigations may show that too implicit faith has been placed in the three criteria of Cranial Characteristics, Pigmentation, and the Law of Succession. It will

be thus seen that I have not substituted language as a criterion of race for cranial and other osteological characteristics, pigmentation, or law of succession.

I then examined the value of these three criteria in general use, and I was forced to the conclusion that osteological differences could not be implicitly relied on and might in some cases prove to be merely foundations of sand, because it is certain such variations take place within very short periods, not only in the case of the lower animals, as in the horse family, but in Man himself. Pigmentation also is not an infallible criterion, for there is a steady tendency in the case of the lower animals to change in colour from latitude to latitude, whilst in the case of Man a steady shading off in colour from dark to blonde may be traced from the Equator to the Baltic. Unless then we postulate that Man is entirely free from the natural laws which condition the osteology and pigmentation of other animals, we must admit that neither bone nor colour differences can be regarded as crucial criteria. The test of descent through males broke down completely, as descent through females can be proved for those who never spoke any but an Aryan language. Finally, I was led to the conclusion that language, when once we realise the laws which govern its borrowing by one race from another, may be taken as a test of race and really as the surest when dealt with broadly and over wide areas and not merely in the way of guess-work etymologies in the case of isolated words.

I had constantly been asked: "How do you explain the fact that in Ireland and in Britain, countries lying so far north, you have the dark Mediterranean race?" To this I invariably reply: You have a dark race, but very different from the dark race as found in the southern peninsulas. The hair is certainly very dark, yet it is not the blue-black hair of the south, whilst the skin is beautifully fair, especially in the west of Ireland, where there has been no admixture, and the eyes are regularly blue. You have in this dark type a transition stage between the melanochrous type of the same race in Spain, Italy, and Greece, with its olive skin, blue-black hair and black eyes, and the tall blonde Scandinavian, where the change in pigmentation is now far advanced, the hair as well as the eyes have become of light hue. I give as a reason for this retardation of change in Ireland the influence of the Gulf Stream, and I point out that especially in the west of Ireland the flora comes close to that of the Spanish Peninsula. For instance, the fine Mediterranean heath grows round the west coast of Ireland from Clifden southwards, whilst there are also some coincidences between the fauna of both regions. As the dark type in Ireland so frequently shows blue eyes, I was led to conclude that the pigmentation of the eye is less stable than that of the hair.

Let us now turn to the Danish results. These show all kinds of pigmentation both in hair and eyes, but with some very important limitations. (1) A very large proportion have blonde hair and blue eyes. (2) A very large number have dark hair and dark eyes. (3) A considerable number have dark hair but blue eyes (just as in Ireland); whilst (4) A few, but very few, have blonde hair and dark eyes, a phenomenon also known in Ireland, but very rare there likewise.

My doctrine of the instability of eye colour has recently received remarkable confirmation. Dr. William Wright in his *Hunterian Lectures* (III, 7) writes: "The effect of sunlight in darkening the skin is well known. As to eye colour, my friend Mr. J. V. Hodgson, biologist to the Scott Antarctic Expedition, informed me that, as a result of living under such unusual conditions, the eyes of the members of the expedition became so blue as to occasion remark on their return to New Zealand, and also on their arrival home in this country. Colour, therefore, like the cephalic index and stature, is also prone to change, and in itself is not deserving of implicit trust." But though the pigmentation of the eye can be quickly modified in the individual under new conditions, the race would probably have to live under the like conditions for a very long period before such blueness would become a fixed racial trait.

It will be seen that (1) my views respecting the short-skulled Alpine race have been endorsed by eminent craniologists, and by the conclusions drawn from the Danish Anthropometric Survey, and (2) that my theory of the origin of the blonde northern race, and of the complexion and light coloured eyes of the north Europeans has likewise been confirmed by the same survey and by the evidence derived from the Antarctic expedition, so far as that goes. Thus within a short time since it was first propounded, my theory of the origin of the blonde Aryans has been corroborated by various kinds of evidence, and has also been endorsed by leading anatomists.

Some years ago Professor R. M. Burrows in his *Discoveries in Crete* (p. 194) criticised my doctrine that the dark population of Greece and Italy had from the outset never spoken any save an Aryan language. But since my reply to him (*Who were the Romans?* p. 35, *sqq.*) neither he nor anyone else has returned to the attack, whilst Mr. Bernard Houghton, though cavilling at the doctrine, does not attempt to bring any arguments against it. On the other hand he has made his most vigorous onslaught upon my theory of the origin of the blonde race of Upper Europe. He describes his paper as an attempt to show that the arguments used by me "rest on foundations of quicksand and that the inferences do not really arise from the facts adduced." "The fundamental error" (in my position) says he, "consists in an assertion of the essential fluidity of head-form and suchlike physical characteristics and in their derivation from climatic and other surroundings, in contrast with an alleged permanence over a given area of the language originally spoken there. He predicates likewise a similar local permanence of idiosyncrasy, polity, and social and religious ideas. The central and dominant feature of the first part of his address consists in an ascription to local influences of those physical traits of mankind which have hitherto, by all competent investigators, been referred to racial causes, that is, to heredity."

Let me at once point out that while I do ascribe great importance to the influence of environment as a factor in the formation of races, I hold also very strongly the doctrine of heredity—in fact, much too strongly for Mr. Houghton's fancy when he has to deal with my doctrine of the great, if not the leading part, played

by heredity in our own chief social problems.¹ But the grand riddle of the true relation between heredity and environment has yet to find an Oedipus to solve it.

Let us now turn to the arguments by which Mr. Houghton thinks that he has demolished my position. I need hardly say that his case depends wholly on the assumption that Man is absolutely free from the natural laws which condition the osteology and pigmentation of other animals. This he thinks was settled once for all when Sir E. Ray Lankester described Man as "Nature's insurgent son." "Once man had discovered fire, clothed himself with the skins of beasts, and built himself a house, he had once for all freed himself from the laws that govern the rest of Nature." This of course is a fair statement of the views put forward by Sir E. Ray Lankester in his Romanes Lecture at Oxford in 1905, and since republished in his book entitled *The Kingdom of Man*. On p. 22 of that work he writes: "In the Lower Miocene there seems to have been a sudden development of brain size not merely in man, but in other animals. Other great mammals of the earlier Tertiary period, such as the rhinoceros, were in the same case." He proceeds (p. 24): "It appears that the increased bulk of cerebral substance means increased educability—an increased power of storing up individual experience, which tends to take the place of the inherited mechanism with which it is often in antagonism. The power of profiting by individual experience, in fact educability, in conditions of close competition when other conditions are equal, must be an immense advantage to its possessor. It seems that we have to imagine that the adaptation of a mammalian form to the various conditions of life had in Miocene times reached a point when further alterations and elaboration of the various types which we know then existed, could lead to no advantage.

"The variations present for election in the struggle for existence presented no advantage—the fittest had practically been reached and was destined to survive with little change. Assuming such a relative lull in the development of mere mechanical form, it is obvious that the opportunity of those individuals with the most educable brain to defeat their competitors would arise. No marked improvement in the instrument being possible, the survival would fall to those who possessed most skill in the use of the instrument and in successive generations the bigger and more educable brains would survive and mate, and thus bigger and bigger brains would be produced. It would not be difficult, though not perhaps profitable, to imagine the conditions which have favoured the continuation of this process to a far greater length in the Simian line of the pedigree than in other mammalian groups. The result is that the creature called Man emerged with an educable brain of some five or six times the bulk (in proportion to his size and weight) of that of any other surviving Simian." On p. 25 he writes: "The mental qualities which had developed in man, though traceable in a vague and rudimentary condition in some of his animal associates are of such an unprecedented power, and so far dominate everything else in his activities as a living

¹ See my reply in *Science Progress*, July, 1910, pp. 143-6.

organism, that they have to a very large extent, if not entirely, cut him off from the general operations of that process of Natural Selection and survival of the fittest which up to their appearance had been the law of the living world. . . . If for the purpose of analysis, as it were, we extract Man from the rest of Nature, of which he is truly a product and a part, then we may say that Man is Nature's rebel. Where Nature says 'die,' Man says 'I will live.' According to the law previously in universal operation, Man should have been limited in geographical area, killed by extremes of cold or of heat, subject to starvation, if one kind of diet were unattainable, should have been unable to increase and multiply just as are his animal relatives, without losing his specific structure, and acquiring new physical characteristics according to the requirements of the new conditions into which he strayed, and should have perished except on the condition of his becoming a new morphological 'species.' But Man's wits and his will have enabled him to cross rivers and oceans by rafts and boats, to clothe himself against cold, to shelter himself from heat and rain, to prepare an endless variety of food by fire, and to increase and multiply as no other animal, without change of form, without submitting to the terrible axe of selection wielded by ruthless Nature over all other living things on the globe." Again we read (p. 27): "In spite of the frequent assertion to the contrary, it seems that neither the more ancient wars of mankind for conquest and migration, nor the present and future wars for commercial privilege, have any real equivalents to the simple removal by death of the unfit and the survival and the reproduction of the fit, which we know as Natural Selection."

Yet after all these bold statements of the freedom of Man from the operation of Natural Selection, Sir E. Ray Lankester in a footnote, p. 28, says: "It would be an error to maintain that the process of Natural Selection is entirely in abeyance in regard to Man." In an interesting book, *The Present Evolution of Man*, Dr. Archdall Reid has shown that in regard to zymotic diseases and also in the use of dangerous drugs, such as alcohol and opium, there is first of all the acquirement of immunity by powerful races of men, through the survival among them of those strains tolerant of the disease or of the drug, and secondly, the introduction of those diseases and drugs by the powerful immune race, in its migrations, to races not previously exposed either to the disease or to the drug, and the consequent destruction of the invaded race. The survival of the fittest in these cases is the survival of the tolerant and eventually of the immune.

This is not the place to point out the series of assumptions made by Sir E. Ray Lankester in his brilliant description (chiefly imaginative) which he drew for his Oxford audience of the emergence of Man from the stage when like all other animals he was under the law of Natural Selection. His own admission contained in his footnote just cited, that Natural Selection is still at work, and that too in most potent forms, is sufficient to demonstrate the untenable nature of the position which he took up in his Romanes Lecture. Yet it is on these dogmatic assertions of Sir E. Ray Lankester that Mr. Houghton bases his criticisms of my doctrines.

Yet the assumption that Man can go into climes very different from those in which his race has long dwelt without any morphological change, is in direct conflict with many known facts. The American of New England with his hatchet face and his thin scraggy beard differs essentially in his type from his English ancestor, whilst the Boer of South Africa shows no less variation from the type of his Dutch progenitors. The instance just cited of the influence of the Antarctic environment on the colour of the eyes is in itself sufficient to demonstrate the falseness of his assumptions. Mr. Torday and Mr. Joyce have furnished me with a still more striking example from their book on the Congo (shortly to be published). It relates to the pygmies who live in the forests of that region, and are known as Ba Twa. The Bu Shongo, who found the Ba Twa in possession, hold them in superstitious awe, regarding them as spirits born from trees. In some cases bands of these pygmies have been induced to leave the forest, to settle in villages and to practise agriculture.

In such cases they are regarded by the Bu Shongo as becoming more human, but no intermarriage ever seems to take place between Bu Shongo and Ba Twa. Mr. Torday visited two of these villages of settled Ba Twa. The Bu Shongo told him that it is only three generations since these Ba Twa left the forest. He noted that the stature of the inhabitants was considerably above that of the nomad Ba Twa, though it did not equal that of their Bu Shongo neighbours. "As the possibility of intermarriage seems quite out of the question, it seems necessary to conclude that the short stature of the pygmies is in some way due to the dwarfing effect of forest life or to the Natural Selection exercised by environment."

Mr. Claude White in his recent book, *Sikhim and Bhutan*, writes: "The people of the West (of Bhutan) are for the most part of Tibetan origin, and came into the country centuries ago. They are of the same original stock as the Bhutias in Sikhim, but have developed in Bhutan into a magnificent race of men physically. Why there should be this marked contrast, I cannot say. It may be due to the difference in climate; but there is no comparison between the two, although the Sikhim Bhutia is a strong sturdy fellow in his own way." My friend, Mr. J. D. Anderson, I.C.S., Reader in Bengali to the University of Cambridge, has pointed out to me that the greater stature of the Khasis of Assam, who dwell in the midst of Tibeto-Burman tribes, compared with that of their Burmese cousins, the Monds, is to be attributed to their environment in Assam, where they continue to speak their own language, though assimilated in physical type to the Assamese tribes around. In passing I may point out that we have in their case an admirable example of the great value of language as a criterion of race. Were it not that these folk have preserved their language, though settled in the midst of an alien race, to which they have physically been assimilated, it would have been assumed that they were of the same stock as their neighbours.

A good many years ago the Indian Government, acting upon strictly Weismannic principles, proposed to plant colonies of Ghoorkas from Nepal in the plains of India in order that we might breed a supply of these admirable soldiers.

for ourselves and not be dependent on the Maharajah of Nepal. A distinguished officer of a Ghoorka regiment on being consulted, very wisely pointed out that if the project was carried into effect, within a few generations the descendants of the Ghoorka colonists would be as worthless for military purposes as the Hindu of the plains. The history of race after race that has entered India and become master of its feeble folk repeats the same sad story of a splendid physique and morale corrupted and moribund within a few generations.

It is a pity that Mr. Houghton did not acquaint himself with the footnote which I have cited, in which his master admits the activity of Natural Selection at the present moment in the human family. But Mr. Houghton himself makes an admission which cuts away the ground from under his feet. He writes: "When he (Ridgeway) goes on to say that the skins of mankind tend to get lighter in gradations from the Equator to the Pole, he stands on firmer ground. Undoubtedly the skin of races long inhabiting the tropics evinces a deeper pigmentation than in those residing in more temperate regions. The reason for this is obvious: although histologists are not agreed as to the cytological facts of pigmentation, it undoubtedly tends, just as do freckles, to protect the outer layers from the actinic rays of the sun." Yet when he comes to deal with my theory that the white skin of the blonde race of Northern Europe is due also to climatic causes, analogous to those which have produced the white hares and white bears, and makes the ptarmigan turn white in winter, he makes merry over my ignorance and stupidity, declaring that such a view "implies a singular inability to grasp the relevant facts of the case or to frame inductions upon them. The whiteness of animals inhabiting northern regions, whether perennial or seasonal, is a very simple case of adaptive colouring first demonstrated by Dr. A. Russell Wallace and now obvious to the merest tyro in biology. Who will assert that bloneness of hair in any way favours a race in a northern habitat. Does Professor Ridgeway mean to assert that in winter our ancestors pursued game or eluded their foes in a state of nudity?"

"Words," says Hobbes, "are the counters of wise men, but the money of fools." Mr. Houghton like many others of his school catches up terms such as "Protective Colouring, Mimicry of Mutation," and believes that by constantly repeating them in parrot fashion he is enunciating irrefragable truths of science. But what is "adaptive colouring"? Adaptive is a relative term. To what is the colour adapted? Of course to the environment in which the animal lives. Accordingly adaptivity is simply one element in my larger doctrine of environment, as is also the case with protective colouring, mimicry, and mutation. But it by no means follows that white is only to protect the animal from his animal foes or to render it easier for it to stalk its prey. I have made no such assumption respecting either the whiteness of arctic animals or the bloneness of the northern race. I only argue from the analogy of the dark colour of the negro in the tropics, which Mr. Houghton himself admits to be protective, not against animal foes, but against "the actinic rays of the sun." In other words, it is a case of "adaptive colouring," as he might have seen, had he understood the use

of that term which he rattles off so glibly. He is evidently not aware that the leading biologists now explain the white colour of arctic animals, not as a protection against living foes, but because white is the best colour for keeping in the heat of the body. The bloneness of the northern race may have therefore a real protective value, as has the blackness of the negro by Mr. Houghton's own admission.

But this is not mere theory. When the Nares and Markham Arctic expedition was being organised, it was stated in the press that in selecting men for the crews, preference was given to the blondes, because the experience of whalers had shown that fair-complexioned men stood the rigours of the arctic winter better than those of a melanochrous hue. Conversely there is a large body of evidence to show that in West Africa, the Solomon Islands and other tropical regions, men of blonde complexion suffer far more from climate than those of a dark complexion. The change in the hue of the eyes under antarctic conditions cited above, clearly proves a connection between light colour and antarctic or arctic conditions, which is not for the purpose of protection against living foes. This "adaptive colouring" is certainly not to protect man from the penguins and other birds, nor yet to enable men to capture these birds more easily, but it has probably a far deeper protective significance.

Now as Mr. Houghton admits that the action of environment affects the pigmentation of the skin in tropical and subtropical countries, but on the other hand denies it for northern regions, he is bound to show at what point, let us say between the Sudan and Northern Europe, this natural law ceases to be operative. Does it suddenly cease to act amongst the Nilotic tribes, or is it in Egypt that he draws his line, or is it the Mediterranean which says, "so far and no farther shall atmosphere and other causes act upon the skin." No scientific man who admits that the skin of certain races is affected by their environment, would dream of excluding the rest of mankind from similar action; even though Sir E. Ray Lankester may state dogmatically that man can advance from the Equator to the Arctic circle without undergoing any morphological change. No man of science when once the facts are presented would believe this for a moment.

It is admitted by Mr. Houghton as well as by every one else that the pigmentation of the negro acts as a protection against tropical light. At what point on the globe do the inventions of man, by which, according to Sir E. Ray Lankester, he has freed himself from the laws that condition the rest of nature, cease to act. At what point as we go north will Sir E. Ray Lankester assert, "Here man's clothes and houses and fire shut him off from Nature's laws?" So too when we come to Europe. Even in these climates where we northerners dwell, arrayed in warm vesture against the assaults of the Boreas, our faces and hands are exposed to the direct action of the atmosphere, and the air must circulate round us, unless we be clad in plaster. Yet our remote ancestors in their slow struggle against nature had but very scanty raiment. The action of the atmosphere suffered but little check from a skin thrown over the shoulders to keep off the pelting rain

But even if clothes could check climatic action on the skin, there are other ways in which environment is constantly acting on man, as it does on the rest of the mammals. Man has to breathe, and therefore, unless he were able to rid himself of his respiratory organs, as he advanced northward, the chemical and physical processes of his body must be influenced by the nature of the air inhaled by his lungs. No sane person will doubt that the atmosphere of one region differs from that of another. If it does not, why do we send those who are suffering from pulmonary phthisis to high altitudes, or to dry climates, such as Australia or the Cape? Again, man, especially primitive man, depends for subsistence on the food produced by the locality in which he lives, or in that from which he draws his supplies. But foods differ according to the nature of the soil and climate. Accordingly, men in each locality must be modified by the character of the food produced in that area, when it is assimilated by the chemical processes of the body, unless they are provided with tin or copper linings throughout the entire length of the alimentary canal.

I have pointed out that altitude acts like latitude. This Mr. Houghton disputes, on the ground that the Pigmentation Survey of Scotland shows bloneness to be predominant in the valleys and dark hair in the mountains, and because in the Himalayas and elsewhere, melanochrous people are to be found sporadically at the present time. But the Scottish example is at once explained by the settlement of fair-haired folk from Northern Europe well within historical times, who drove into the hills the weaker aboriginal dark race.

He is careful not to deny that the dark tribes found occasionally in mountain areas in India and elsewhere have only taken refuge there in recent times.

The action of the atmosphere upon the skin can be observed in our own islands. The delicate pink complexion characteristic of Ireland and the West of England is in striking contrast to the pasty complexion of the women of the East of England, whether blonde or brunette. I know a case where a Jewish girl reared in Cork grew up with the typical Irish complexion instead of the hereditary tint of her parents.

I have hitherto spoken only of the action of atmosphere on the skin. There is an equally great probability that the various types of hair—the wool of the Negro with its quadrangular section, the straight hair of the Mongolian with its oval section, and the various forms of European hair are due to climatic conditions. It is certainly a curious fact recorded by Azara that the horses and the cattle in Paraguay, where of course these animals have only been introduced from Europe within the last three centuries, have a singular tendency to grow short curly hair like that of the negro. This may be regarded as a clear example of the action of environment upon hair. If this is so in the case of the large mammals there is no reason why a like cause may not have acted upon the hair of the negroes, whose natural habitat is a climate not unlike that of Paraguay. The action of the atmosphere on hair even in our own islands is very noticeable. It is not improbable that the curly hair so much more frequently seen in Irish villages than in English

is due to the difference in the atmosphere, just as the pink complexion mentioned already.

In my *Origin and Influence of the Thoroughbred Horse* I was able to show that there is a very distinct relation between the coat-colours of horses, bay, brown, chestnut, black, grey, white dun, and their internal qualities. We need not therefore be surprised, if before long the physiologists will be able to demonstrate the existence of distinctive differences between the various races of men, such as hitherto have not been dreamed of. One very important discovery has already been made in this direction. My friend Sir H. H. Risley, K.C.I.E., has lately called my attention to some very interesting facts recently published respecting the difference between the arterial pressure and blood constituents of Bengalis and those of Europeans. The arterial pressure in the case of the former is much lower than the European standard, whilst the percentage of blood corpuscles is also much less. At present it would be premature to say dogmatically that this is the result of environment, but as the pigmentation and the characteristic hair of the Negro are admittedly concomitants of life in the torrid zone, and as the horses and cattle introduced into Paraguay show an analogous phenomenon, we need not be surprised if it should turn out that in other physiological characteristics the negro not only differs widely from the various types of Europeans and Asiatics, but also that the various peoples of Europe and Asia differ widely from each other in similar respects. Their differences in external characteristics, bloneness, or dark complexion, and the like, may be found to have corresponding internal qualities as in the case of horses. Further researches on this particular line of investigation are now being carried out in India, and let us hope that some of those brilliant men who are engaged in Africa in the study of sleeping sickness may be able to devote some of their attention to this very important field of Anthropology.

In our new President, Sir H. H. Risley, we have the founder and organiser of the great Ethnographical Survey of India. We may rest assured that under his headship the Royal Anthropological Institute will be able to exercise on everything that appertains to Man a more stimulating influence than ever before in its history.

As this paper is just being printed off, the Report of the Immigration Commission of the United States Government, "On the changes in bodily form of descendants of Immigrants," has reached me. The results already obtained by Professor Boaz corroborate most strongly the views put forward by me at York (1906) and at Dublin (1908). "The head form undergoes far-reaching changes due to the transfer of the races of Europe to American soil. The east European Hebrew, who has a very round head, becomes more long-headed; the south Italian, who in Italy has an exceedingly long head, becomes more short-headed; so that both approach a uniform type in this country, so far as the roundness of the head is concerned . . . we are compelled to conclude that when these features of the body change, the whole bodily and mental make-up of the immigrants may change."

SOME TECHNOLOGICAL NOTES FROM THE POMEROON DISTRICT, BRITISH GUIANA.

(PART II.)

BY DR. WALTER E. ROTH.

Local Correspondent of Royal Anthropological Institute.

[WITH PLATES I-XIV.]

IN the present paper I propose dealing with the manufacture of cotton and other fibre-twines, together with an account of certain articles (cords and hammocks) into the composition of which they chiefly enter.

COTTON TWINE.

After the cotton [*yaho-(t)udai-a* = cotton tree]¹ has been picked, it is put in the sun to dry, but for not more than a day or two. It can then be stored in a *quake*, or basket, where it may remain for any length of time, provided it is not allowed to get wet. When about to be put to use, the *débris* is carefully picked out, and the whole teased, bit by bit. This teasing process is important. A very small handful is pinched up, teased out with the fingers, "smacked," so to speak, between the flats of the hands (Plate I, Fig. 1), and thus alternately teased and sharply squeezed into a very thin circular pat about 4 to 4½ inches in circumference. During the smacking process there is a slight simultaneous rotation at the wrists. A large number of such pats are placed one on top of the other, forming a pile or, rather, cylinder about 6 or 7 inches high. This cylinder is then pressed laterally, folded in its length, and gradually stretched. It is again folded in its length and similarly stretched, so as to form a soft pad about 2 feet long. Such teased cotton is called *yaho-abuni*. The spindle, or *Kiro-hodóri* (Fig. 2), is made of a tapering shank (*tu-dai-a*) up to 18 inches in length passed through two circular discs of "calabash" (*tuburado*), which form a guard (Fig. 3). As often as not, the spindle will be seen to have wound on it some cotton thread already manufactured, which will now be attached and worked into one extremity of the pad. This bit of manufactured thread, however, does not lead directly from the pad of raw material to the spindle, but indirectly, by means of an intervening loop, around the nick at the extremity of the shank. The purport of the loop will soon be recognised. On the other hand, if the spindle has no cotton already wound on it, the latter is replaced by any other conveniently sized twine similarly attached to its extremity by loop, and so on to the pad. At any rate, the long

¹ Unless otherwise stated, all native names in the text are Arawak.

pad of teased cotton is twisted into a spiral, loosely at the distal extremity, but progressively tighter towards its proximal, which is again stretched previous to the whole being lightly wound around the forefinger and wrist (Fig. 4), its distal end hanging loosely from over the fore-arm. That portion of its proximal extremity between the two thumbs is now gradually and very carefully teased out and stretched, any untoward slipping being prevented by resting the third finger of the right hand upon the bent fore-finger of the left, which acts as a sort of fulcrum. On completion of the stretching, the amount and exact degree of which will depend upon the thickness of ultimate thread desired, the portion of cotton just stretched is rolled with the right hand, at the same time that the tip of the spindle is twirled in a reverse direction with the left (Plate II, Fig. 1). Not only does the loop, already referred to, ensure this rotary motion being imparted to the thread, but it also prevents the thread itself becoming shifted or untwisted from off the spindle, when the latter is now left to hang loosely up against the spinner's thigh. Some more of the pad is unwound from off the arm, its proximal end again carefully stretched, etc., the spiral condition of the whole being retained and aided in the act of re-winding it on to the wrist, and the spindle again twirled. The whole process, indeed, consists of these three factors successively repeated—the winding of the pad, the stretching of that portion of it between the thumbs, and the twirling of the spindle. The retention and tightening up of the twist in the portion of thread already manufactured is, of course, due to the rolling of the two thumbs, during the twirling of the spindle, being in opposite directions. When a convenient length of thread, say 18 inches or a couple of feet, has been manufactured, it is rolled taut on to the spindle (Fig. 2), the spiral into which its constituent fibres have been twisted being in the direction opposite to that in which the completed thread is being rolled.

It will be noticed that, so far, the cotton yarn is a single ply. It has now to be completed into a double ply, the form in which it is put to use. This is effected in one or other of two ways:—

(a) After being removed from the spindle, it is stretched and doubled taut on itself, with the help of an assistant, and while stretched, it is rolled from the looped end tightly around any little piece of wood, etc., into a ball. A length of about a couple of feet or so is now unwound from the ball, rolled on the right thigh downwards [*i.e.*, a left to right spiral, regarding it with its axis vertical], the double thread so formed being then wound on to the spindle-shank, and attached by loop to the nick at its extremity. Another couple of feet is unwound from the ball, held in the left hand, and the spindle-shank itself rolled downwards on the thigh, the loop being finally unloosed from its tip so as to allow of the double twine, just manufactured, being wound on to the shank. This process of winding is not quite so simple as it might at first sight appear. Holding the shank vertical, it is effected by twirling the spindle-tip from within outwards, and keeping the thread taut. In other words, the finished cotton thread is wound in a spiral having a direction opposite to that in which its two constituent strands

have been rolled. Another couple of feet are unwound from the ball, and the same manipulation repeated, and so on, until the whole ball has been used up. From off the spindle shank, the completed thread is finally wound into another ball, the form in which it is kept for permanent use. When a piece of cotton thread is finally completed, the ends cannot, of course, be spliced or plaited into another thread, any continuity that may be desired having to be effected by knot.

(b) The second method is carried out on similar lines, but with this difference, that two single threads on two different spindles are unwound and rolled direct on to a third and larger spindle. This method thus entails the possession of three spindles, but at the same time obviates the necessity of unwinding, doubling, stretching, etc., with the help of an assistant. It is advantageous in that longer lengths of cotton can be conveniently dealt with.

The degree of coarseness or fineness with which the cotton may be spun into twine will depend upon the use for which it is intended, the two extremes being met with in the rough string forming the basis of the cotton hammocks, and in the delicate twine ornamenting the butt-end of the Arawak arrow.

COTTON CORDS, BANDS, ETC.

Cotton is largely employed in the manufacture of bands or cords used according to their width and contour as waist-bands (for supporting the loin cloth, etc.), forehead-bands, anklets, armlets, body cords, as supporting strings for the satchel form of pegalls, and for other purposes. The procedures connected with the making of these different articles will be now described, according to the apparatus or methods employed :—

(a) *With a single flat needle.*—This method is peculiar to the Carib portion of the community. Given a ball of cotton, one extremity from off it (a) is wound around all four fingers of the left hand three times, a fourth loop being passed between the middle and ring fingers, the twine being otherwise kept in position by the thumb (Plate III, Fig. 1). The needle, a flat tapering piece of wood about 3 inches long, split at its wider end to form an “eye,” is passed under the two outer loops and threaded by wedging the cotton into the split (Fig. 2). In this, and in succeeding illustrations, the left hand is purposely not represented, in order to render the varying positions of the different parts of the thread more clear. The needle is next pushed onward, and with it its contained thread, which, in its passage through the two vertical loops, is clutched tighter in direct proportion as the loops are kept more taut by the thumb, etc. Once through, the needle is removed, and the size of the horizontal loop (h') diminished by carefully pulling on its ball end (b, Fig. 3) until it is just a trifle greater than the width between the two outer vertical loops. The needle is again inserted, but on this occasion under the two middle vertical loops, as well as under the two extremities of the horizontal one (Fig. 4); it is once more threaded (Fig. 5) and pushed through, so as to form a second horizontal loop (h'', Fig. 6), which is then reduced to suitable size as before. The needle is now inserted under the two horizontal loops alone

(Fig. 7), the whole is tightened up, and the vertical loops removed from off the fingers to be firmly tied together with the free end (*a*) of the cotton (Fig. 8), the article in the course of its subsequent manufacture being now held as in Fig. 9. Thus, fixing the needle, and threading, a third horizontal loop is formed (*h'''*, Fig. 10). This is similarly reduced, the threaded needle passed under the two last-manufactured loops (Fig. 11), and so a fourth horizontal loop produced (*h''''*, Fig. 12). Indeed, putting it shortly, the whole process consists of but a repetition of passage of needle under the two immediately preceding loops, threading it, and tightening up the newly formed loop ready for the needle again. The illustrations, Figs. 8 to 13, being diagrammatic, purposely only indicate exactly one-half of the cord. Portion of the completed cord is shown, from the aspect in which its manufacture has been described, in Fig. 14, with all the horizontal loops squeezed, as it were, into a semi-diagonal position. On the opposite aspect, however, owing to the ball end of the cotton necessarily intervening between every successive horizontal loop, the appearance of the cord is somewhat asymmetrical (Fig. 15) a feature, which becomes still more marked in cross-section (Fig. 16).

(*b*) *With two flat needles*.—Certain of the Caribs have developed the above procedure by using two needles, so as to produce a comparatively wide band (Plate IV, Fig. 1), which is manufactured on the following lines:—As soon as the two horizontal loops have been completed (Plate III, Fig. 7), the article is turned right round, a second needle is inserted under the four vertical loops in front of the original needle, in an opposite direction, of course, now (Plate IV, Fig. 2), and two horizontal loops worked on it, as already illustrated (Plate III, Figs. 2–6). Directly these latter have been made, the article is again reversed, and two horizontal loops worked on the first needle. The process is thus alternately repeated: two horizontal loops on one needle, a reversal, two horizontal loops on the other needle, and so on until the required length of band is reached.

(*c*) *By "Tatting."*—Tatting (Plate IV, Fig. 3) is practised among the Warrau, the left thumb (LT) and forefinger (LF) replacing the two "arms" of the flat lyre-shaped tatting-needle which used to form one of the necessary adjuncts of our grandmother's work-boxes. Operations are commenced by making a slip-knot (κ) at the proximal extremity (*a*) of the string, which is held more or less taut by being wound over the little finger, the loop formed by the slip-knot being passed over the forefinger; the distal or ball end (*b*) of the string is looped over the thumb and then over the forefinger. The first loop on the forefinger is now passed over and in front of the second loop (Fig. 4), and tightened up (Fig. 5) by pulling on the proximal end of the string. The distal extremity is next looped on the thumb (Fig. 6), the previous loop there being passed over it in similar fashion (Fig. 7), the whole being next tightened up by pulling—firstly, on the upper half of the loop passing over the forefinger, secondly, on the upper half of the loop passing over the thumb, and thirdly, on the ball end of the string (Fig. 8). It must be borne in mind that the illustrations, to maintain their diagrammatic character, do not actually represent the complete tightening up described. The

distal end is next looped over the forefinger (Fig. 9), the loop, already behind it, passed in front (Fig. 10), and tightened up again by three successive pulls as before (Figs. 10, 11). The process is then repeated on the thumb, again on the forefinger, and so on alternately until the square-sectioned cord (Fig. 12) reaches the length desired. In tightening up, the string must not be pulled on to too great an extent, a contingency which will prevent the string slipping through where necessary; it is only the proximal extremity which has to be kept fairly taut by regularly unwinding from, and re-winding on, the little finger.

(d) *Four-loop plaiting*.—I have called this “plaiting” for want of a better name. Three of the loops are passed one in between the other, the fourth alone being directed over-and-under as in orthodox plaiting. The process is met with among the Warrau. A cotton string about 25 feet long is wound four times, in the form of a skein, from left palm to over big toe, and its extremities knotted there, with the result that we have four loops which are held taut by means of the first and third fingers of each hand (Plate V, Fig. 1). As the palms are turned more or less up during the progress of manufacture, the four sets of loops, for descriptive purposes, may be spoken of as two outer (o on first fingers) and two inner (i on third fingers), these being slipped from one digit to the other in regular sequence. Thus, with the strings all taut, starting with the inner loops, these change fingers (Fig. 2) by passing one loop *inside* the other; the same is then done with the outer loops. This is followed by a change in place between the (operator’s) right outer and left inner loop, which are *not* passed one through the other, but the former *over* the latter. The whole process is then repeated in the same order—inner loops, outer loops, right outer and left inner loop—until the suitable length required has been obtained. To tighten up the successive “plaits,” the big toe of the free foot is squeezed in between the two inner loops after each substitution. When a longer cord is desired a longer twine will be used, and under such circumstances the four loops are hooked on to a projecting branch, forked stick, etc. (in place of the big toe), and the action of the free foot, after each substitution of two loops, replaced by the hand or stick of an assistant. When a shorter cord is manufactured, the action of the free foot, etc., is replaced by pulling the two hands (with their contained loop) widely apart after each substitution. The completed cord is more or less flat (Fig. 3) on one surface, convex (Fig. 4) on the other, and in section (Fig. 5) a trefoil, with one of the foils larger than the other two.

(e) *Five-loop plaiting*.—Also among the Warrau. Here the cotton string, some 6 feet or so, is wound five times round the toe so as to give five loops. Two of these (*a*, *b*) are held taut in the left hand (Plate VI, Fig. 1), and three (*c d e*) in the right. In the former case, *a* is fixed on the thumb, first and second fingers, and *b* on the third; in the latter, *c d e* is supported on the first, second and third fingers respectively. As the palms are here also turned up more or less in the process of manufacture, loop *e* is on a level lower than all the others. This is the first position. “Plaiting” is started by slipping *e*, the lowest of the three

off the right third finger *through a* on to the left forefinger, which is flexed well over it, at the same time slipping *a* off the left thumb and forefinger on to the left middle finger (Fig. 2); the plait is then tightened up, by the free foot, an assistant, etc., in the manner already explained in the previous paragraph. The right thumb is next inserted into *c*, and the right third finger into *d* at the same time that the right middle finger is taken out of it and placed in *c*, the whole being tightened up again. This, the second position (Fig. 3), is practically the reverse of the first. Plaiting is again started by slipping *b*, the lowest of the three, off the left third finger through *c* on to the right forefinger, which is flexed well over it, at the same time slipping *c* on to the right middle finger and then tightening up as before; the left thumb is now inserted in *e* and the left third finger into *a* at the same time that the left middle finger is taken out of it and placed in *e*, and tightening again. This, the third position, is identical with the first (Fig. 1), the succeeding plaits taking place just as before—alternately slipping off the lowest of the three loops from one hand into the upper of the two loops on the other. The cord so produced is flat (Fig. 4) on one side, convex (Fig. 5) on the other.

(*f*) *Crochet work*.—Carib women make anklets by a sort of crochet work. This article¹ is usually put on the individual when a child and may be worked actually on the limb itself; otherwise, it is worked around a wooden cylinder of about the same circumference as the ankle which it will subsequently grace. The needle employed is a thin wooden pencil with a tapering point, though all variations in material and shape approaching the orthodox European crochet-hook are availed of; on occasion I have observed a bent wire used. Starting with one end (*s*) of the string (Plate VI, Fig. 6) a chain is made of a number of loops (*a a a*) until a length equal to the circumference of the ankle is reached; a loop independent of the previous one, *i.e.*, a free one (*f*), is now made and tied to the proximal end of the string (*s*), though for clearness sake this actual tying together is not shown in the illustration. The second row of loops (*b b b*) is next made not only as before, dependent upon one another, but each is also dependent on every consecutive two in the first row (Fig. 7). The third and succeeding rows of loops (*c d e*) are made on a plan identical with the second, and thus row after row (Fig. 8) is added until the desired width is obtained. The completed article reminds one, in general appearance, of a knitted woollen serviette ring.

(*g*) *Weaving*.—Weaving on a loom, though in a primitive fashion, is common among the Arawak and the Warrau. A loom or frame-work is made by driving two thin sticks vertically into the ground, and tying cross-pieces on to them above and below (Plate VII, Fig. 1); it is called by the Arawak *adda akkoda(hu)-kwannahu*, *i.e.*, stick—to make a plaiting. A length of cotton is next tied over the

¹ Such an anklet is worn by both men and women, and may be seen above the calf as well as around the ankle, and "in olden times" is said to have been worn on the arms also; it lasts on the body for years, never being taken off. Brett (*The Indian Tribes of Guiana*, p. 122) gives the name of the anklet as *sapuru*, but I find that this, strictly speaking, is the Carib name for cotton alone.

cross-pieces and knotted (*k*), the remainder being wound over and over again until it is finally fixed (*l*); as these lengths ultimately constitute the warp of the completed article, the number of loops into which the cotton is wound round will vary with the width of article required. The constituents of each loop, front and back, are next approximated and linked by means of a separate thread (*c*) fixed after the manner of a chain-twist, the two ends of which are tied on one side (Fig. 2). The "needle" (Fig. 3) is now passed through from right to left under and over each alternate string, firmly pressed and rammed down on its edge (*n*, Fig. 2) so as to render the chain-twist taut, even and straight. [This needle, about 8 or 9 inches long, is very like a miniature paddle, and is actually so-called by the Arawak, viz., *nahalchi toburiko-kwanna*, i.e., paddle—to knock, hit, etc.] It is next raised a little distance and turned on the flat so as to enlarge the front-to-back interspace between the warp constituents (Fig. 4), thus rendering the insertion of the first stretch of weft (*w*) from left to right a comparatively easy matter. The needle is now turned on its edge again, pressed and rammed down on to the weft, and drawn aside, only to be reinserted into the warp in and out alternately among the strings, but with this difference, that those threads which were all in front of it before, are now behind. After pressure, etc., with its edge down, the needle is again raised and turned on the flat, so as to enable the second line of weft to be formed by inserting it in between from right to left, and then ramming down as before. The process is thus repeated again and again by inserting the weft from alternate sides (Fig. 5) along the passage made for it by the needle between the constituents of the warp, until such time as the requisite length of band is obtained, when the weft is finally tied on to one edge of the warp. Removed from the cross-pieces, each of the loops at top and bottom (i.e., through which the cross-pieces passed) is rolled separately into a tassel (Fig. 6). A short length of band thus "finished off" may be used as an anklet, being secured to the limb by tying the two series of tassels together; it is worn by both men and women, the former, however, using narrower ones. The Arawak call these anklets *totoro-(u)kuru*, i.e., ankle-band, and the Warrau *akka-mara-bassa*, i.e., ankle-belonging to-flat. Waist-bands are made on a similar plan, but of course with a much longer frame-work. The Arawak and Warrau names for such waist-bands are *udébohú-póssohu* and *ákkabe-schwina* respectively, in both cases the first half of the word indicating the waist, the second a belt or band. The Arawak term may be contracted into *depo-sohu* or *defo-sohu*.

"I-TE" TWINE

The leaf of the *i-te* palm, the *ohi-ju* of the Warrau (*Mauritia flexuosa*), supplies a very important fibre. The young as yet unopened leaf, or *ite (ti) shiri*, the latter word signifying any unopened bud, leaf, etc., is cut away from the tree and the distal extremity of each segment treated as follows. While the segment is firmly secured in position with the left hand, its extreme tip is bent between

the right thumb and forefinger, the portion of blade immediately below being doubled upon itself and nipped between the same thumb and middle finger (Plate VIII, Fig. 1). During the course of a comparatively slow movement which the right hand now makes towards the operator, it glides over the doubled portion of segment, but at the same time squeezes it so tightly as to produce a kink on both its surfaces. It is this kink which enables the cortex to be seized and stripped to its base, both front and back, and where it remains until all the remaining segments have been similarly treated. These cortical strips, now known as *tibi shiri*, are finally all removed and either soaked in water for a week or else boiled for half an hour or so and washed; they are next sun-dried for a week or ten days, those obtained from one leaf being usually tied up at one end together into a knot. The length of such a strip will be from about 26 to 30 inches. This stripping of the *tibi shiri* and its manufacture into twine is essentially woman's work. According to the size of thread required, each strip can be used split (with thumb-nail), and again split to make a very fine twine, or employed whole. According to the method of manufacture the completed thread is known as *sa-rau* (left-to-right spiral) or *sensó-ro* (right-to-left spiral).

To manufacture the *sarau*, two strips, held at the one extremity between the left forefinger and thumb (Fig. 2), rest upon the naked (right) thigh where, with the flat of the (right) palm, they are rolled along the middle third of the thigh, once upwards, *i.e.*, towards the hip, at the same time that the left hand, pulling outwards, keeps them on the stretch. During the course of this movement, wherein the pressure is exerted principally from the ball of the little finger and corresponding half of the palm, it must be remembered that though these may over-ride, each strip is rolled *separately* in a spiral or twist, the direction of which may be described (Fig. 3) as being from right to left (regarding it with its axis vertical). Without removing the right hand, so as to prevent the strips untwisting, but only shifting the pressure towards the outer edge of the palm, both twisted strips are then rolled *together* along the outer third of the thigh, once downwards, *i.e.*, towards the knee (Fig. 4). The result is that the portion intervening between the two hands, constituting the now manufactured twine, will, of course, be found twisted from left to right, while the free ends hanging over the thigh beyond the right hand will be recognised as having twisted themselves together from right to left (Fig. 5), the separation and fixation of these two opposite spirals taking place at the "lock" (*l*) where the main pressure of the palm-edge was exerted.¹ The right-to-left spiral formed by the free ends, due to the original and separate rolling of each component into that direction, is now opened by inserting the right forefinger in the lock and pulling outwards (Fig. 6); the left-to-right spiral in the piece of completed twine retains its direction owing to that of its constituents bring both of them in the opposite one. The whole process of rolling up and down

¹ The reader is requested to note that, for the sake of clearness, the original twist of each ply, indicated in Fig. 3, is *not* shown in Fig. 5; for the same reason, the original twist of each ply in Fig. 10 is not indicated in Fig. 11.

is again and again repeated until a distance of about 5 or 6 inches from their extremities is reached, when a new strip (Fig. 7, *c*) is rolled into and with the shorter (*b*) of the two original, this compound one (Fig. 8, *b c*) and the single original (*a*) being together rolled, in the manner above described, into another short length of twine (Fig. 9), until the ends of two strips only (that of the newly introduced and that of the original) again remain free; another strip is next rolled in with the now very much shorter single original one, and both compound ones twisted up again. It is a case of rolling only two at a time. A twine can thus be manufactured bit by bit into any length required; on the other hand, the Indian cannot splice it on to another twine like a sailor would do with a rope. The *sarau* is used for making the "barred" variety of hammock and for the constituents of scale-lines. In the latter case, however, the fibre is rolled more coarsely and a three-ply instead of a double one finally formed; the actual thigh-rolling (down and once up) of such three strips is identical with what is to be observed in the manufacture of the *huri-aring* variety of *kro-wa* twine to be subsequently described.

The *sensoro* is made on the exactly reverse plan as the ordinary two-ply *sarau*, each strip (Fig. 10) being rolled separately down on the middle third of the thigh, and then together up (Fig. 11), with the addition that, owing (it is stated) to the increased thickness of twine resulting from the two strips being generally used unsplit, the rolling in each direction is repeated two, three, or more times. To prevent the two strips becoming untwisted on completion of each successive roll in the same direction they are deftly picked up between the right thumb and forefinger before the pressure exerted by the palm on their distal ends is removed and so placed in suitable position ready for the next roll. The completed *sensoro* thread can thus always be distinguished from the two-ply *sarau* by its twist being a right-to-left one. It is employed for making the "purse-net" hammock.

It has been claimed¹ that because "not only are their thighs naked, but their skins are smooth and hairless," the making of string in this way is rendered easy to the Indians. At the same time it should be noted that the Australian aboriginal, with often a marked development of hair in these situations, makes his or her fibre-twine on identical lines. I have also seen this practice of rolling twine continued by many Indian women who were so far civilised as to have worn dresses since childhood.

KRO-WA TWINE.

Kro-wa twine (from *Bromelia*, *Anannasia*) is obtained as follows (Plate IX, Fig. 1):—A leaf (*l*) is fixed in a loop cord (*c*) attached to a strong cross-beam, the loop being at about the same distance from the ground as the operator's head. The leaf itself is suspended, not at its middle, but with its thicker basal (proximal) end the longer: its distal extremity is next attached under and over (Fig. 2) on to a stiff

¹ Im Thurn, *Among the Indians of Guiana*, p. 285.

round stick (*s*) and gripped in position between the right fore and middle-fingers, and between both hands. A sharp pull downwards is made: this tears about 6 or 7 inches of outer cortex from off the inner fibrous structures around which the torn shreds hang, and below which the proximal portion of the leaf remains free (Fig. 3). This latter extremity after being pulled down a bit is next turned upwards so as to form a sort of sheath for the fibres already freed (Fig. 4) and is steadily but firmly pulled off and cast aside. This pulling off is a somewhat tricky business, the art being to close the upturned sheath above with the left thumb and fore-finger so as to prevent the fibrous core from slipping out (Fig. 5) and to clench it below between the corresponding digits of the right: the purpose of the remaining fingers is rather to guide and steady the sheath during the pull exerted by both hands. The exposed fibres remaining suspended are next picked and cleaned of any débris. The distal end of the leaf is again similarly fixed over the cross-stick and pulled, with the result that the whole proximal extremity of the leaf is dragged through the loop, whence it emerges entirely cleared of its outer cortex. The leaf, such as is left of it, is again fixed on the loop, and its proximal fibres together wound over the cross-stick, in exactly similar fashion as the distal extremity originally was pulled sharply downwards, the cross-stick drags away in their entirety the fibres now cleared of all cortical substance. This forcible pulling out of the kro-wa fibre is man's work, the strength required for cleaning the cortex from off the proximal extremity being too much for the women. In the absence of a son or other assistant, a wife may help by looping three or four leaves in a row already for her husband to pull, and may often complete his work by dragging off the distal portions which require far less vigour in their manipulation. Of course here and there are to be found some women who are physically capable of carrying out the complete pulling process by themselves, and always on the lines above described, *i.e.*, commencing with the cleaning of the proximal extremity of the leaf.¹ Kro-wa fibre is used for hammock-ropes and scale-lines, bow-strings, fishing-lines, etc., and in all cases is rolled into twine by the women.

The manufacture of kro-wa fibre shreds into twine varies with the purposes for which it is ultimately intended. The woman has to be informed of the particular kind required, the different names of the completed article depending for the most part upon the particular fish which, when used as a line, it will be employed in catching. These are the *hokoro*, *imiri*, *korasso*, *huri*, etc., all of them fish which so far I have not had opportunities of getting identified, the twine being indicated by this name and the suffix *-aring*. The variations in technique are mainly due to the proximal ends of the fibre-shreds being so much greater, comparatively speaking, than the distal, and it is to obviate this inequality that the methods, about to be described, are employed. As a preliminary, it may be noted

¹ I can find no confirmation of the statement made by Im Thurn, *op. cit.*, p. 284, that "the men peel the leaf from the bottom upward, the women from the extreme point downward to the base of the leaf."

that all these twines are formed by a down-and-up rolling on the thigh, which gives rise to a right-to-left spiral (similar to the *sensoro* of the *ite* fibre):—

(a) The *hokoro-aring* (Plate X, Fig. 1) is the finest of all the kro-wa twines, being made up of a thickness of two fibre-shreds. These (*a*, *b*) are placed side by side but with their opposite ends together so as to ensure uniform thickness throughout. The rolling upon the thigh—once down and once up—is commenced at about the outer third of either extremity, and the shorter end completed into twine: the reason for not making a commencement with the rolling at the actual extremity is that the movements here with a thick and a thin fibre would not be regular. The portion of completed twine next changes hands, and the rolling is started again from the point of commencement so as to complete the remainder; when the extremity is approached two new fibre-shreds (*c*, *d*) are successively rolled into it (as described in the case of the *ite*) but care has to be taken that as each is inserted, the distal and proximal ends of the two original fibre-shreds are connected with the new proximal and distal ones respectively. When completed, the line will thus be just about double the length of a fibre-shred. The *oradiro-aring* is manufactured in identical manner, and only differs from it in that it is about three times as long.

(b) The next thicker kro-wa twine is the *imiri-aring* (Plate X, Fig. 2). A loose strand is made of two, three, or four fibre-shreds (*a a a*), similar ends together, and rolled as a whole a few times down and up, so as to give comparative cohesion. Another loose strand, of an identical number of shreds (*b b b*) is similarly manufactured, and laid upon the previous one, but with opposite ends together. Commencing with the centre of the two super-imposed strands, they are now rolled into twine, the usual once-down and once-up movement being continued until the extremity is reached; this done, the whole is turned round, rolling recommenced at the middle, and the other half made into twine. The completed article (*c*) is thus limited to the length of one fibre-shred.

(c) The *korasso-aring* (Plate X, Fig. 3), used for spring-hooks as well as for fishing, is made of four bundles (*ax*, *bx*, *cx*, *dx*) of fibre-shreds, each bundle with similar ends together, and each containing, as far as the operator can judge, an equal number of shreds, anywhere from about twelve to as many as twenty-four. The proximal end of one bundle (*ax*) is just sufficiently rolled into a corresponding length of the distal extremity of a second (*bx*) as to make one very loose strand of them—the length of a fibre shred. A similar procedure is carried out with the third and fourth (*cx*, *dx*). The two resulting strands are next placed side by side together, and the thigh-rolling commenced at their centre—once down and once up when the twine on one side is finished, the whole is turned round, rolling recommenced at the starting point, and the other half completed. The finished article (*y*) is thus the length of one fibre-shred.

(d) Unlike all the preceding kro-wa twines the *huri-aring* is formed by the rolling together of three bundles of fibres; it is made not only for catching that particular fish but certain others, its manufacture varying only in the length

employed. Thus, while the *huri-aring* measures at most two fathoms, the *oradiro-*, the *warburi-*, and the *lukunanni-aring* run up to something like four, while the *wirokotori-aring* will measure from twenty to twenty-four. So also hammock scale lines (*ishiro-kodu*), which are made in an identical manner, will reach this extreme length, and, if necessary, can eventually be made into a hammock rope. A bow-string (*shimara-habo-itimi*) is another article manufactured on identical lines as the *huri-aring*. The method by which increased length and uniform thickness is obtained may be described diagrammatically as follows (Plate X, Fig. 4):—Several bundles of kro-wa (*ax*, *bx*, *cx*, etc.), are arranged so as each will contain about an equal number, say a dozen, fibre shreds, all arranged of course with similar ends together. With three bundles (*ax*, *bx*, *cx*), which are placed one slightly in advance of the other, a start is made at about 6 inches or so from their thinner extremity, where all three are rolled into one, down and once up, and this shorter end of the twine completed first. Taken off and reversed on the thigh, the longer end is commenced to be rolled at the starting-point, and when about half-way to completion, the distal (thin) extremity of a fourth bundle (*dx*) is rolled into the hindmost one (*cx*) of the original three (*cdx*) which are then again all rolled together (A,B). After a while, the distal (thin) end of a fifth bundle (*ex*) is rolled into the second (*bx*) of the original three (*bex*), and all three again rolled together (C, D). Later on, the distal extremity of a sixth bundle is similarly joined into the third of the original three, the whole again rolled, and so, the process repeated by inserting the thin extremity of a new bundle successively into the thick extremity of the hindmost bundle exposed. Experience alone seems to teach the operator when the varying thickness of the resulting twine renders it opportune to insert a new bundle.

(e) It was stated in the previous paragraph that kro-wa scale lines can eventually be made into a hammock rope (Plate X, Fig. 5). Three scale lines are required for the purpose; at one extremity they are each tied on to a wooden handle; at the other, after being passed around a vertical post, they are tied together. The knobbed wooden handles, some 7 or 8 inches long, with their lines taut, are each rolled simultaneously by an operator in a right to left spiral (similar to the sensoro of the *ite*). Still keeping up the stretch, the three handles are transferred to the charge of one assistant, while a second helper pulls the tied ends beyond the post and twists them in an opposite direction (a left to right spiral, like the *sarau*); the purpose of this is to tighten up the three constituents of each scale-line. Starting from the tied extremity, and with the tension still maintained, the third operator (Fig. 6) then guides the three scale-lines (already tending to roll into one another in a left to right spiral owing to the torsion to which they have been severally and separately subjected) into their respective relatively proper courses to form the three-ply hammock rope. The extremity of such a rope (Fig. 7) is "finished off" by tying tight, and then loosening all the free ends of the strands (*a*) which are now bent backwards and tied lower down (*b*), to be subsequently turned up again, and finally tied a third time above (*c*).

HAMMOCKS.

Hammocks are made either of *ite* or cotton, by women. In the former case, the construction varies according to the kind of fibre-twine used, whether *sensoro* or *sarau*.

The body of the *sensoro* variety of *ite* hammock ("purse-net" hammock) is woven on the flat at such height from the ground as may be convenient to the operator. The frame or *akkoda(hu)-kwannahu* consists of two parallel sticks (Plate XI, Fig. 1 *a, b*) fixed either to uprights in the ground, or to the walls of the house, etc.—the distance which separates them varying of course with the length of article about to be manufactured: in place of sticks, I have sometimes seen taut cord used. The hammock itself, practically all warp, is composed of one continuous piece of *sensoro* twine which, after being rolled up into a tight ball, is unwound into its own shuttle (*ekobo*) attached to what is in fact a "needle" formed of a thick piece of *kro-wa* or *ite* string (Fig. 2*n*). The shuttle is made of a series of clove-hitches, one above the other, which are respectively slipped off the top of the "needle" according as more and more twine is brought into requisition. A commencement is made on the extreme right where the thread is tied on to the frame (Fig. 1, *c*). From here it passes over both sticks so as to form the first four warps (constituting the hammock-edge), these being next fixed in position by winding them together spirally with a varying number of turns until the left-hand stick is again reached, whence the string stretches back direct to the right-hand one. Passing now from right to left, the previous warp is locked into the loops of the spiral enclosing the hammock edge, until the left stick is reached, whence it runs again direct to the right one, leaving the latter, the thread on its return passage to the left locks the two previous warps. The whole process thus consists of arranging the warps so that those passing from left to right run direct from side to side of the frame, while those in the opposite direction lock the two warps immediately preceding. When the desired width of hammock has been reached, it is finished off by means of an "edge" made of four warps, wound around spirally in exactly the same manner as was adopted at the commencement, and finally tied (*d*).

In removing the hammock from off the frame, care is taken that a scale-line is immediately inserted so as to prevent the mesh coming undone.

It may be noted here that the *ite* baby-sling or *tí-mehí* (Fig. 3) in which the Arawak or Warrau mother carries her infant (Fig. 4) is made on identical lines as the *sensoro* hammock. The body of the baby-sling is about 2 feet long, and over a foot wide. The two parallel sticks, or usually in this case the two taut cords upon which it has been woven, are utilised again *in situ* upon which to weave the band joining its two extremities. Owing to the comparative narrowness of the band it follows that its junction with the body of the sling is necessarily thrown into numerous folds or pleats, which thus help to lend the necessary contour to the finished article.

To make the *sarau* variety of *ite* hammock ["barred" hammock], a large frame

of two cross-pieces attached to two uprights (*a, b*) is fixed firmly into the ground (Plate XII, Fig. 1). The warp is wound upon this from below up (*c, d*), while the weft is formed of separate cross-bars, the number of which will vary with the size of hammock required. The weft is alone invariably made of cotton, and so far as can be judged by careful inquiry from amongst the oldest natives, this material has always been used for the purpose; indeed, the reason given for the employment of cotton is that, owing to the increased friction, the weft cannot slip along the warp. Each cross-bar (*f*) consists of four (cotton) strings tied at their extremities in a knot and worked into the warp from below up, a start being made on the extreme right. One pair of strings is passed in front, the other pair behind, the two lowest warps over which they change places (Fig. 2), the two strings which were in front now passing behind and between the components of the other pair. The strings cross in similar fashion over the next two higher warps (Fig. 3), again over the following two warps (Fig. 4), and so on until the topmost warp is reached, when all four are knotted together. Of course, during all this process both warp and weft are tightened up as much as possible, but the illustrations being diagrammatic, do not show this. Starting again from below, the second cross-bar (weft) is manufactured in similar manner save that after the lowest two warps, the two pairs of cotton strings alternately cross one another over one warp instead of two. All the remaining wefts, except the last, are made like this second one; the last to be manufactured is on identical lines with the first. As a result, the first and last wefts are shorter than the intermediate ones, thus assisting in giving shape to the hammock when ultimately stretched. The portions of warp (beyond and to the outside of the first and last cross-bar) which have been wound round the uprights of the frame constitute the loops through which the scale-lines are finally passed.

Cotton hammocks on the Pomeroon and Moruca are made on practically the same lines as the *sarau* just described, except that two warps are always taken up together throughout each and every cross-bar (weft).

Certainly among the Caribs, Acawai, Warrau and Arawak on these two rivers, the hammocks are not handed over to the men to "prepare and add the scale-lines"—this being done by the women; neither in these localities is regard paid to such a detail as making the scale-lines shorter in the centre. Many and many a time have I watched the women inserting the scale-line (*sl*) through a varying number of loops at a time (Fig. 5), fixing its extremities and overcasting it with a cord (*oc*), where ultimately it will be slung on the hammock rope. The slinging of rope (*r*) to scale-line is done in a very simple manner (Fig. 6) by means of a slip-knot.

The means of attachment of hammock-rope to beam, rafter (*b*), etc., is also simplicity itself (Figs. 7, 8, 9), so as to allow of a single pull to free it: while the proximal end (*p*) of the rope is dragged upon to tighten up, its distal extremity (*d*) is pulled on to loosen.

ADDENDUM.¹

The Caribs manufacture a cotton cord not only for tying round the waist to support the "lap," but also for making a handle to the club whereby it is slung on the wrist, made as usual by women.

Two lengths (Plate XIII, Fig. 1, *ab*) of the smooth "arrow-reed,"—the plant used for making arrows from—are loosely tied at one extremity (*a*), the other being held between the left thumb and first joint of the fore-finger; in the diagram, these sticks are represented as much shortened. A piece of cotton from off a cotton-ball is next wound five times on the free extremities of the sticks, with the lowermost coil between, and the remaining four around them, the free end of the cotton (throughout the process of manufacture) being held taut by the thumb, the other end of the cotton remaining attached to the ball; the ball-end of the cotton always remains on the maker's right-hand side. According to whether a thick or thin cord is required, a cotton thread of proportionate diameter is employed. Counting from above, down, the fourth coil is now pulled upon so as to form a loop—(and the smooth surface of the wood minimises the friction consequent upon the first three coils being dragged upon)—this loop being then passed over one (*b*) of the sticks, so as to hang to the right (Fig. 2). Both sticks are now turned over in the hand from right to left, so as to reverse their positions, and the loop made to hang on the left (Fig. 3), its lowest portion is then picked up and pulled out from under the lowest coil, and the whole then passed over the right-hand stick (Fig. 4). The sticks are again reversed to their original position (Fig. 5), the loop made to hang on the left, and its lowest portion similarly picked up and pulled from under the lowest (half-) coil, to be passed over the right-hand stick (Figs. 6, 7), over which it falls; the former illustration represents the cotton purposely relaxed for the occasion to show the ins and outs of the procedure, while the latter indicates the process *in situ*. After reversal, etc. (Fig. 8), the lowest coil is pulled upon to form another loop, but as this same coil is in direct continuity with the original loop, all it really does is to replace it by another and slightly larger one, which is similarly passed over the right-hand stick (Fig. 9). Again reversing, and with loop on left (Fig. 10), the lowest portion of the latter is picked up, pulled out, and passed over the right stick (Fig. 11). And so the process is repeated by successively reversing pulling on lowest portion of loop, and passing over the right-hand stick (Figs. 12, 13): again (Figs. 14, 15): again (Figs. 16, 17): again (Figs. 18, 19): again (Fig. 20), and so on, until the desired length is obtained, when the cord is bodily slipped off the free ends of the sticks. On its removal, the cord will be observed to be more or less like a dumb-bell in section (Fig. 21), the flattened "handle" having been produced by the horizontal portions of the cotton strand passed between the sticks. The whole is finally put upon the stretch, a position in which it will be found to remain (Fig. 22), the section of the cord becoming now a quatrefoil. The extremities have finally to be tied, the stitch not being a "lock" one.

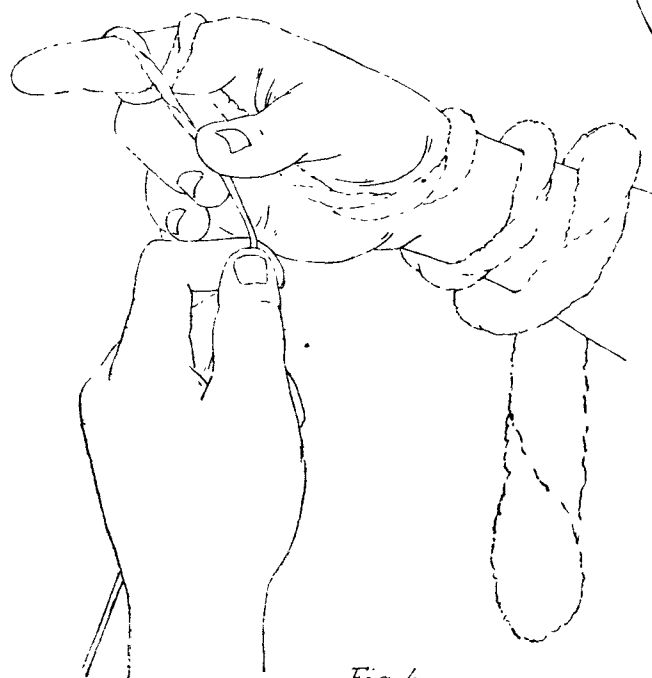
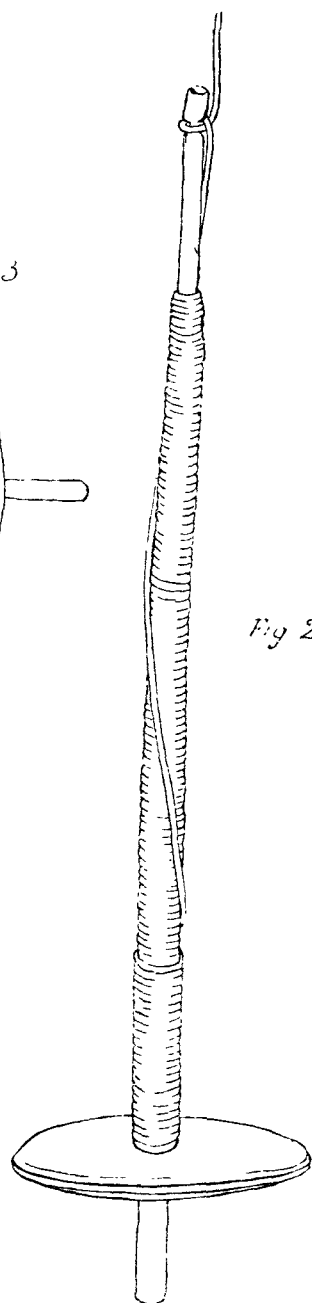
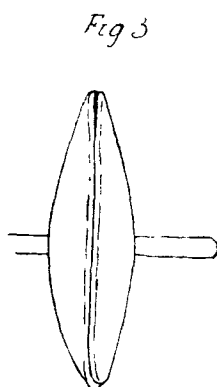
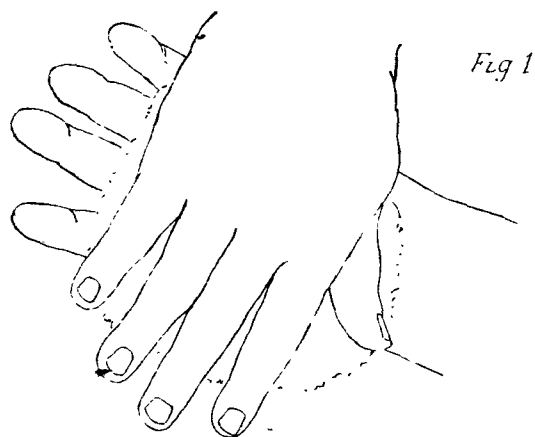
The Warrau also employ a more complicated form of "tatting" with three cotton

¹ The following notes were received from Dr. Roth too late to allow of insertion in their proper places under "Cotton Cords," in his MSS. previously forwarded.—ED.

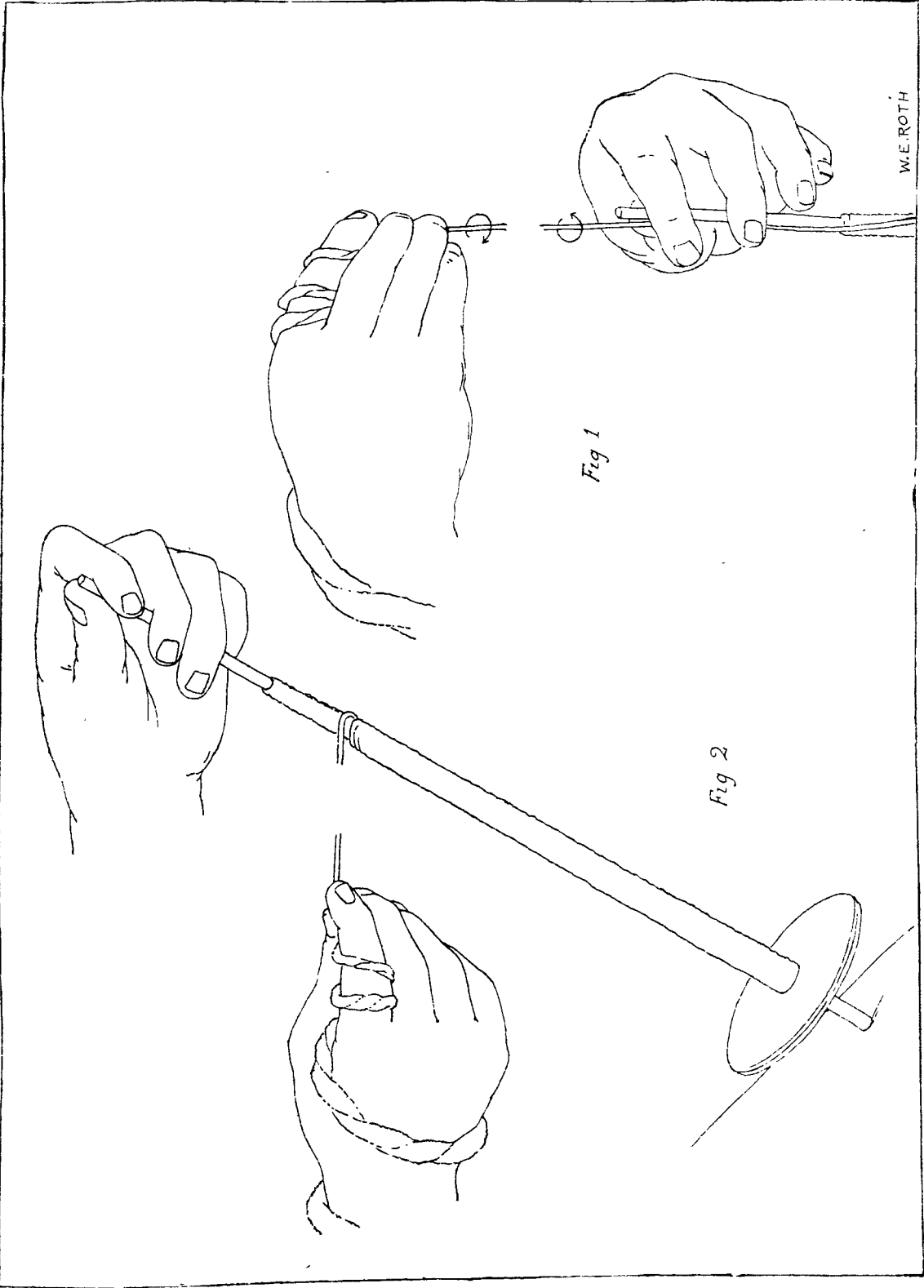
strands, Plate XIV. All three strings, of the necessary length required (Fig. 1, *a b c*) are tied together at their extremity (*k*), and a loop made in two of them (*a b*) close to the knot. These loops are now passed respectively over the left thumb and forefinger (Fig. 2), tightened up, and the knotted end of the strings fixed in position between the little finger and palm, while the free ends are held more or less taut by an assistant, such assistant being occasionally replaced by the maker's own big toe. [In the accompanying diagrams it must be noted that, for clearness's sake only, the loops are represented as being loose.] The third strand (*c*), the one without a loop, is now passed over the top of the fore-finger in front of the loop (*b*) already there (Fig. 3), the latter being then passed over it and tightened up by dragging upon its free end (Fig. 4). The same string that has just been pulled upon (*b*), is now passed over the tip of the thumb, in front of the loop (*a*) already there (Fig. 5), the latter being then passed over it, and rendered taut (Fig. 6). The same string that has just been pulled upon (*a*) to effect this, is next passed over the tip of the fore-finger (Fig. 7) in front of the loop (*c*) already there, the latter passed over it, and tightened up. The process of manufacture is thus repeated between these two digits in the following sequence:—loop on one digit, string in front of it, loop passed over string and tightened, its extremity now becoming the string in front of the loop on the other digit. The completed cord is shown in Fig. 8.

There is an eight-strand cotton cord, met with amongst the Warrau, which is made by passing over the big toe, etc., four skeins of cotton twine which are tied together above, but divided below, the eight strands so derived being then spread out more or less on the flat (Fig. 9) by holding them between the thumb and forefinger of either hand. Starting with the highest on the left side, this is passed over the next three (Fig. 10) on to the right side, where it becomes the lowermost. The same thing is done with the right side, passing the highest strand over the next four (Fig. 11) to become the lowermost on the left side. The process is repeated on the left side, and then on the right—passing the highest strand over three and four successively—and so on alternately to whatever length of cord required (Fig. 12). The pattern of this cord is named after the *mohotta*, a fish with an arrangement of scales which it is said to resemble.

When a cotton cord is intended to carry feathers it is manufactured on the following lines:—Around an assistant's finger or other suitable support, some three to four skeins of string—according to the thickness of completed cord required—are wound: these are tied above by the end of cotton attached to the ball which now passes in and out between the two halves of the skeins so as to overcast them (Fig. 13). During the whole procedure, the skeins are not divided below, but held more or less taut by the assistant. Each overcast, as it is completed, is tightened up, not only by pulling on the cotton strand itself, but also by squeezing it up with the left thumb-nail: except that, at regular intervals, but on opposite sides alternately, an overcasting loop is left slack. It is into each of these slack ones that the feathered-quill (Fig. 14) is ultimately bent over and tied. Feathered cords, on this pattern, are wound around the distal extremity of the medicine-man's rattles.

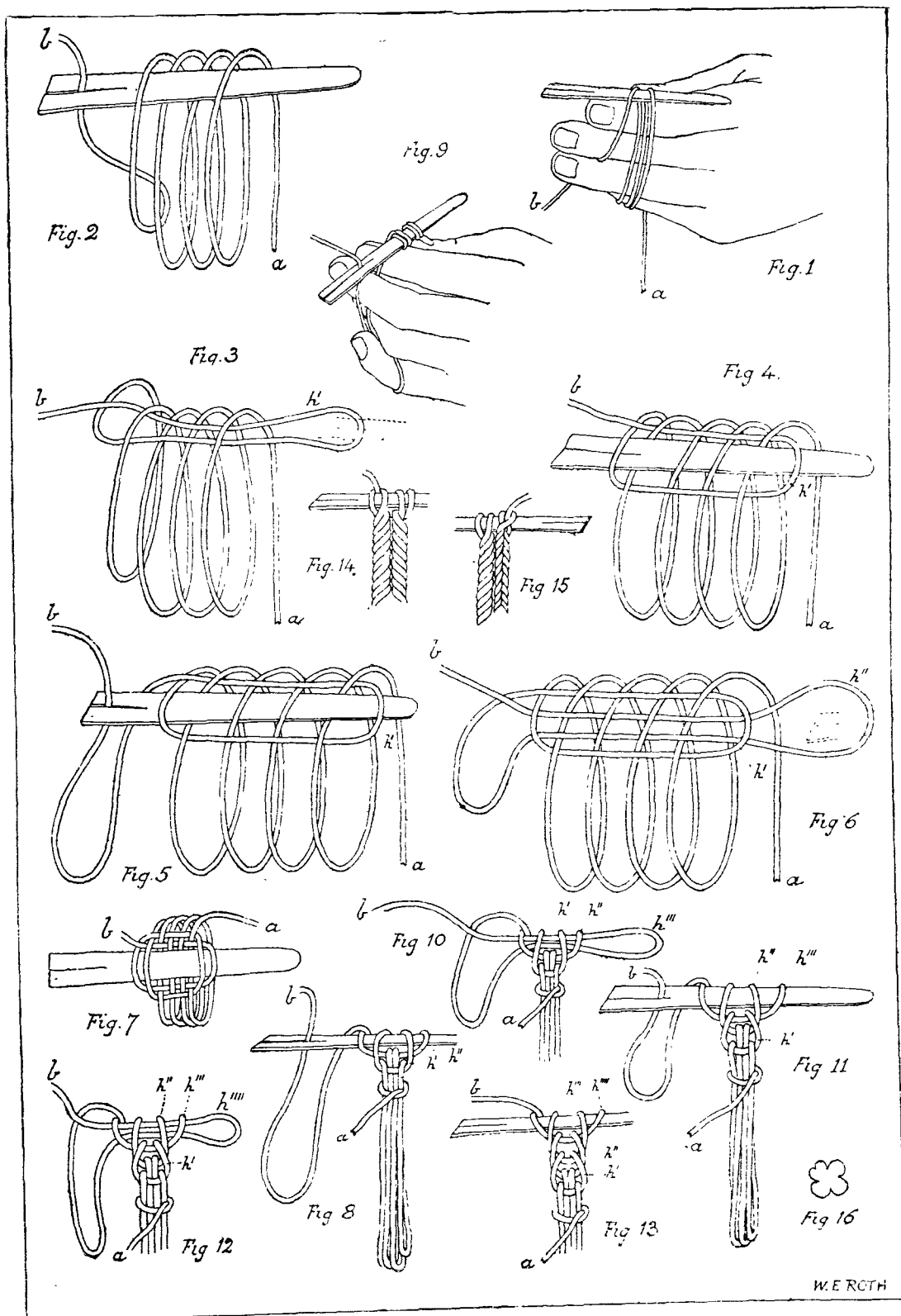


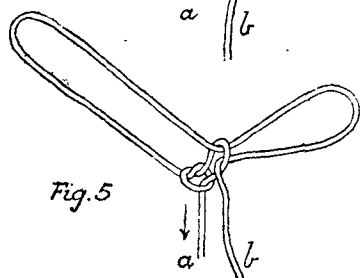
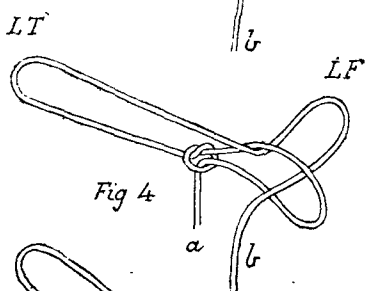
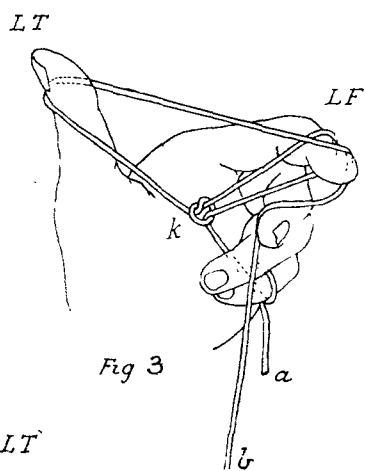
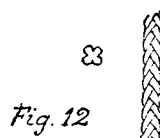
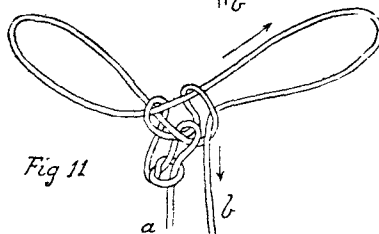
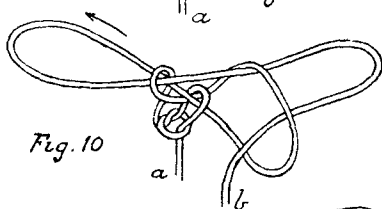
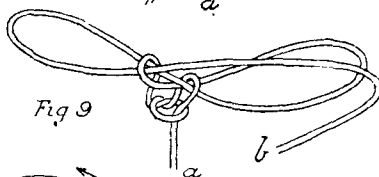
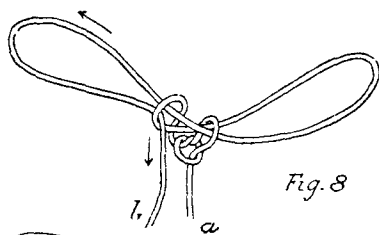
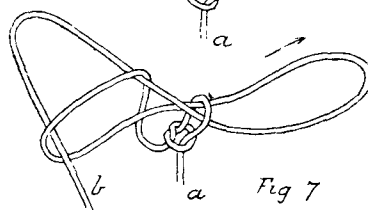
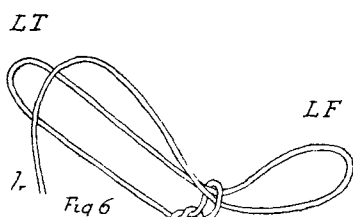
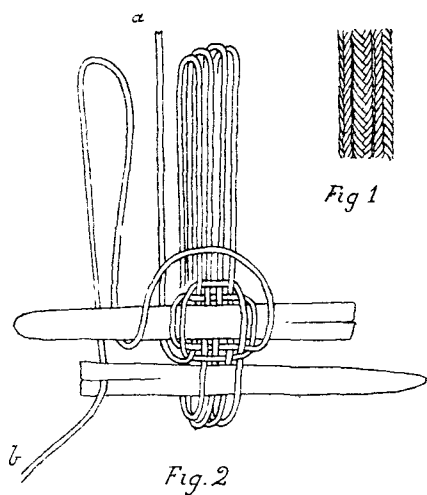
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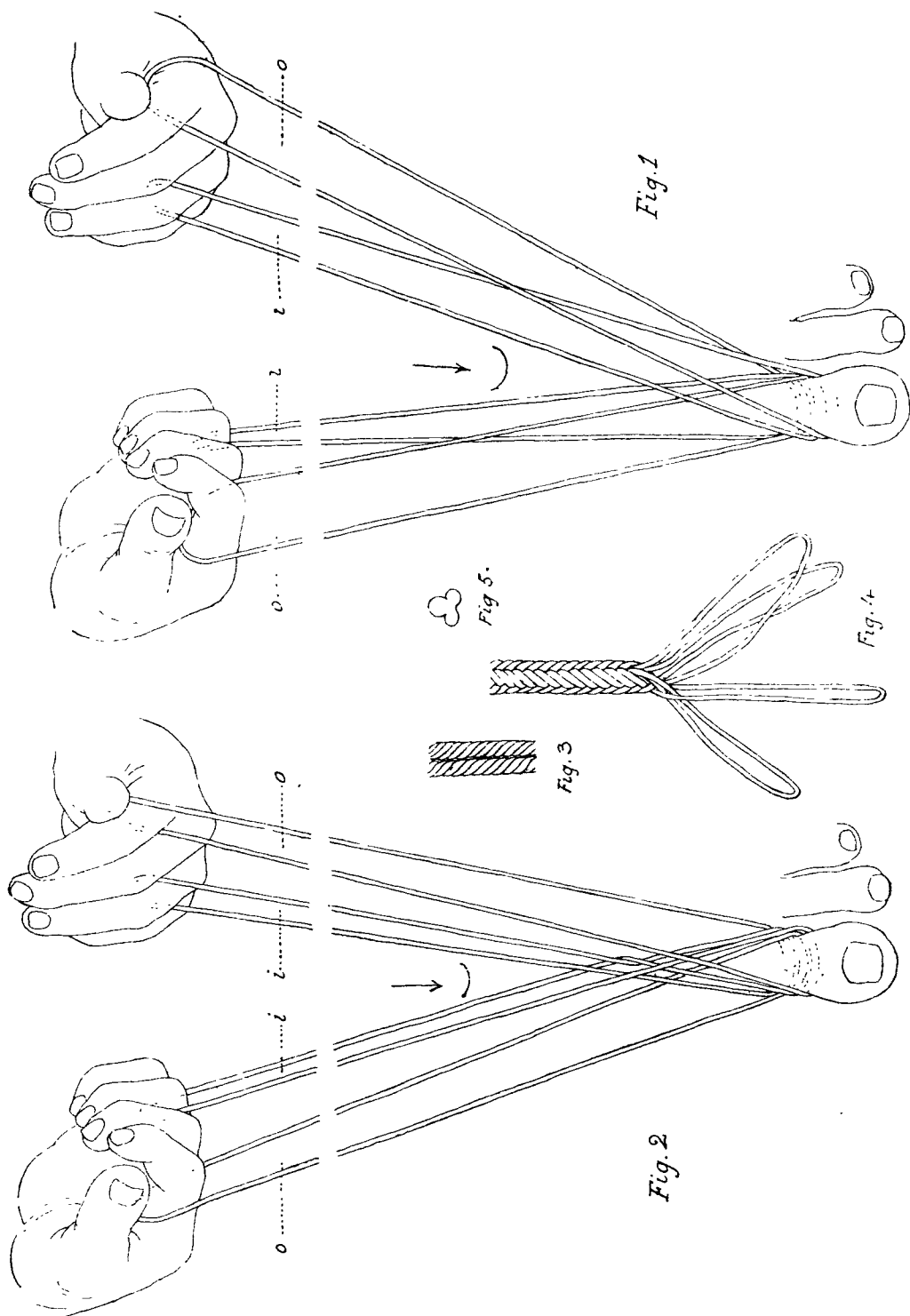
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TECHINOLOGY OF THE POMEROON DISTRICT.





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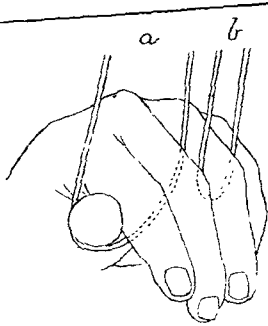


Fig. 1

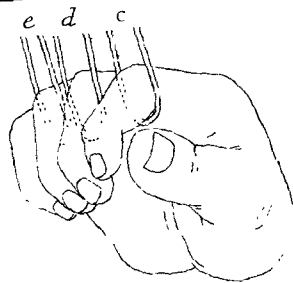


Fig. 2

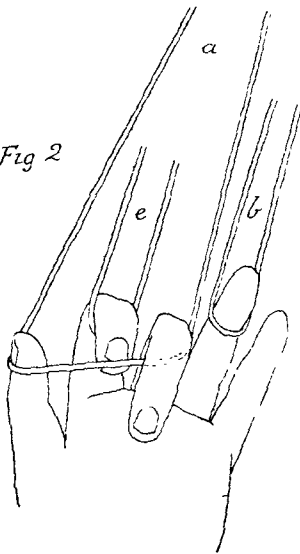


Fig. 3

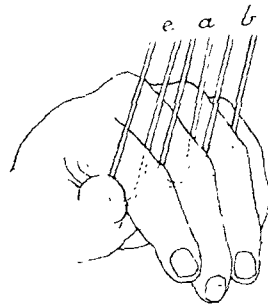


Fig. 4



Fig. 5

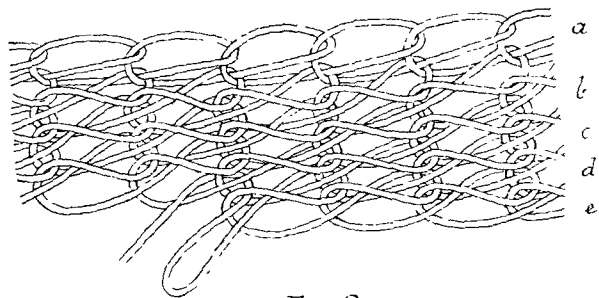


Fig. 7

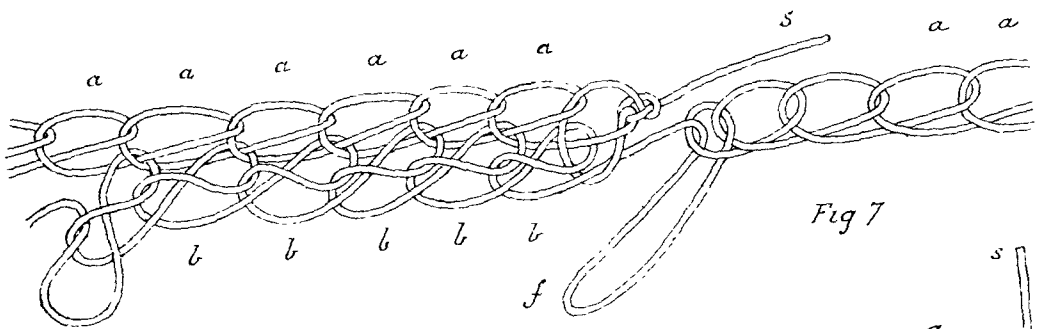


Fig. 8

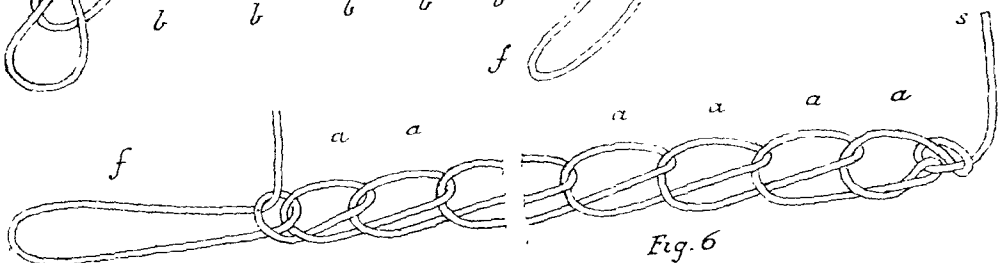
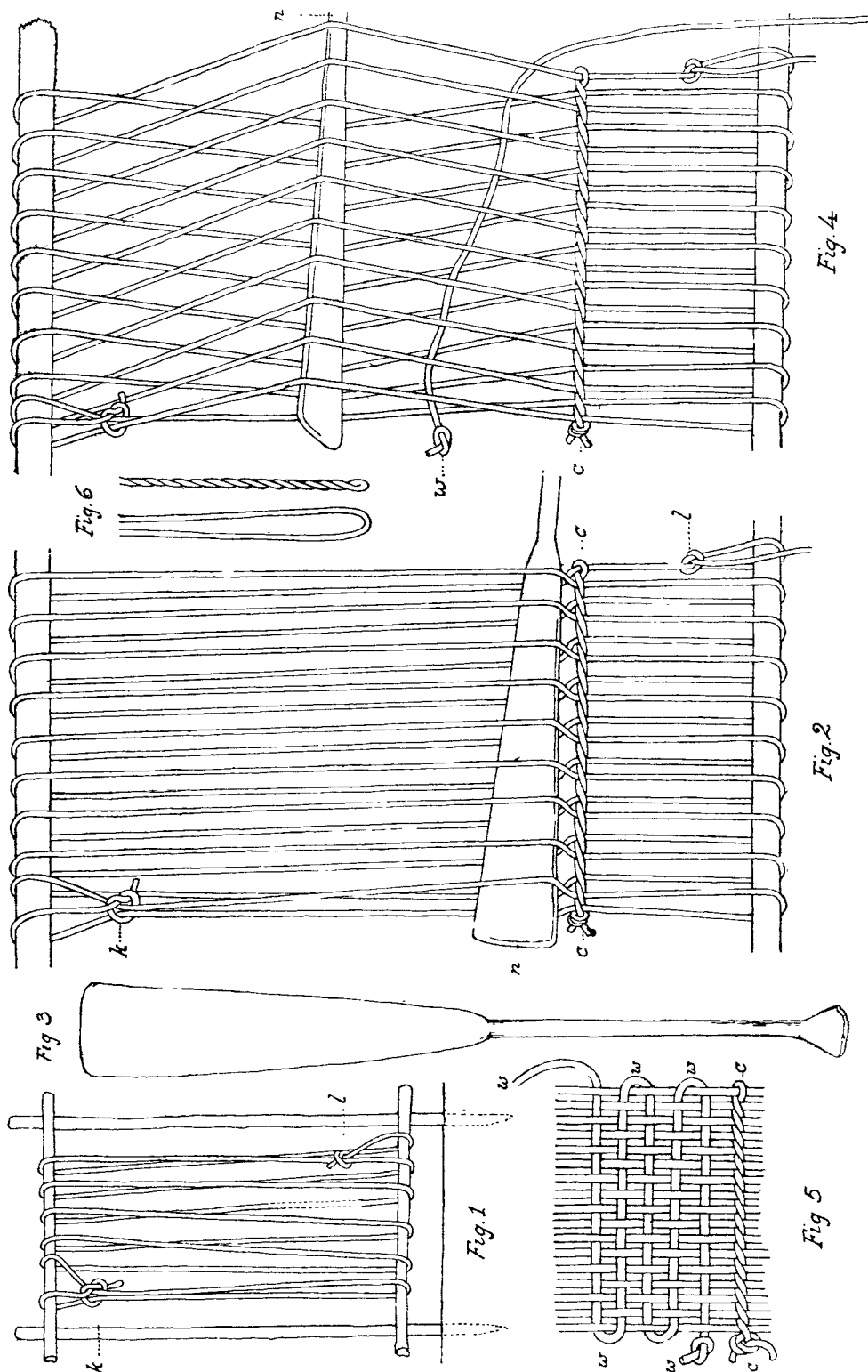
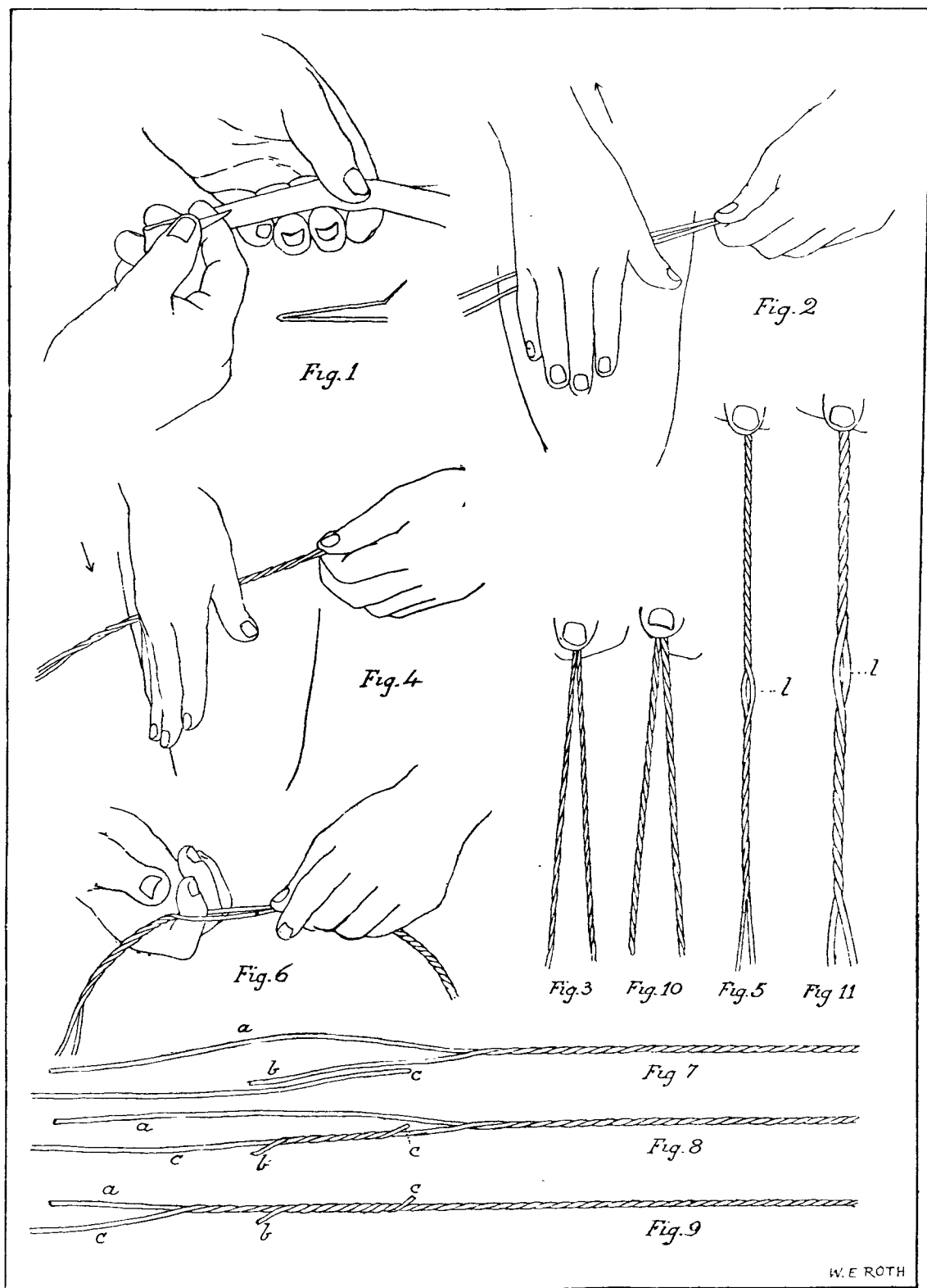


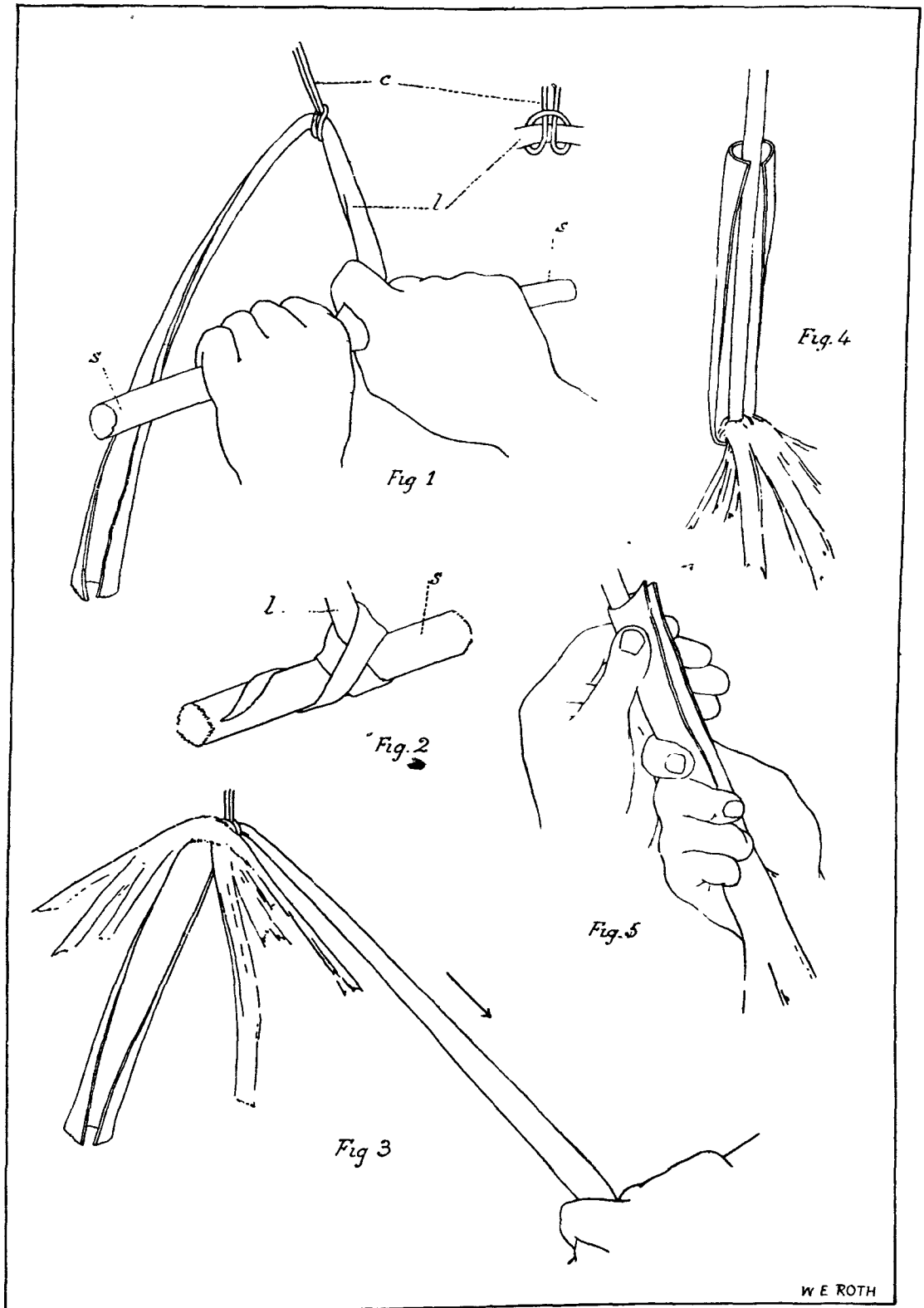
Fig. 9

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TECHNOLOGY OF THE POMEROON DISTRICT.



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Fig. 2

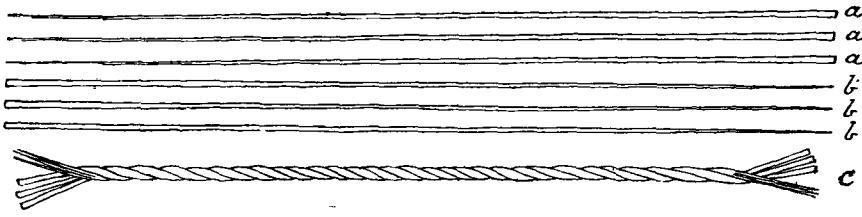


Fig. 3

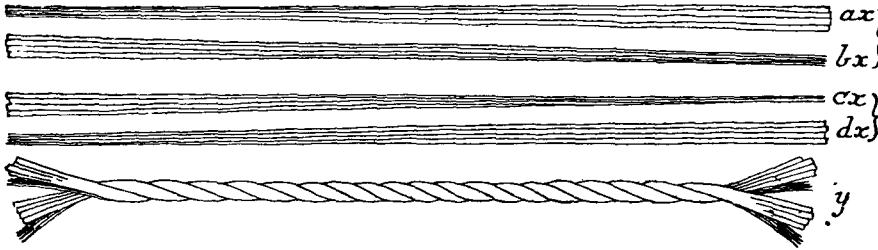


Fig. 4

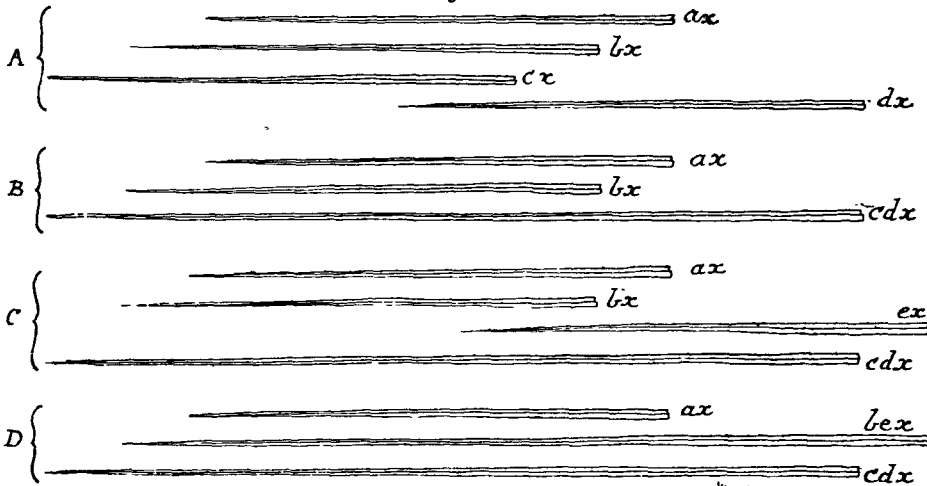


Fig. 5

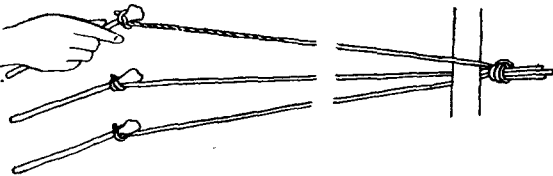


Fig. 6

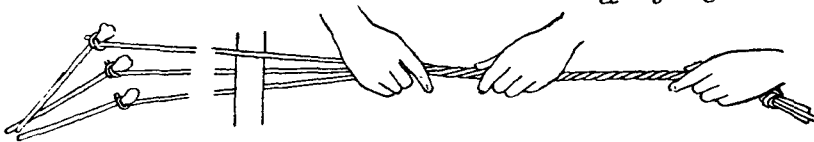
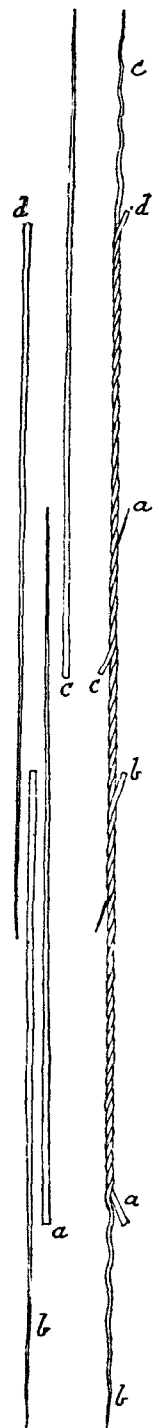


Fig. 7



Fig. 1



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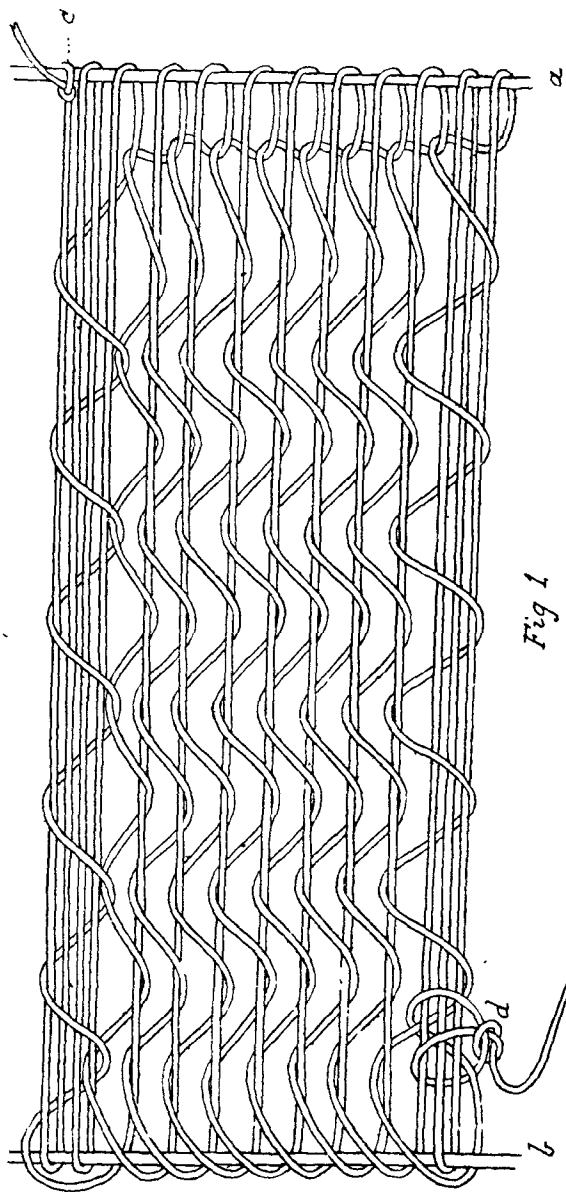


Fig 1

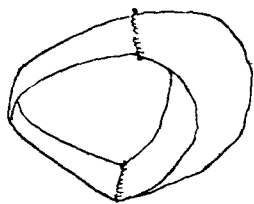


Fig 3

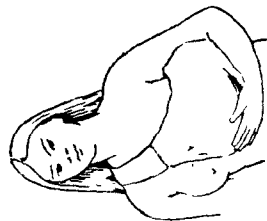


Fig 4

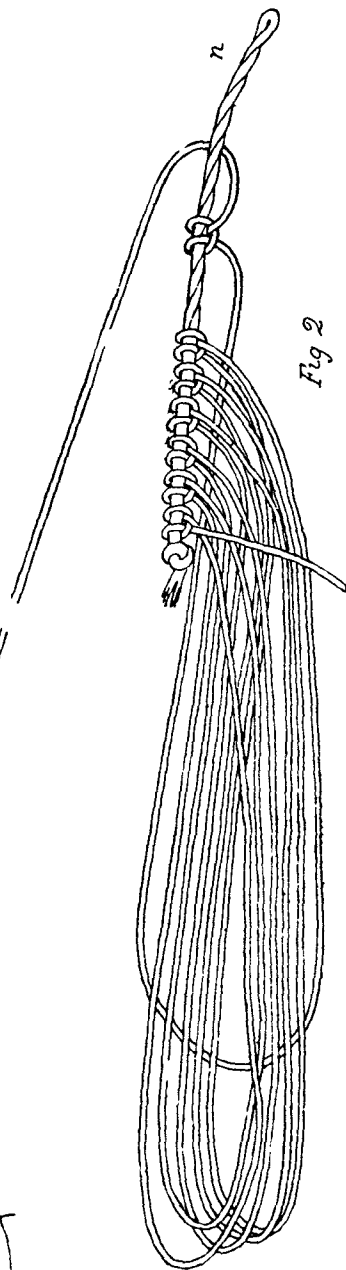
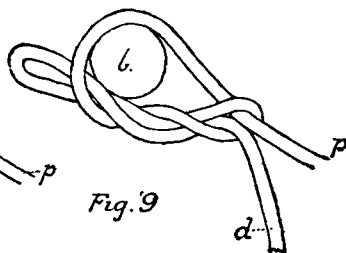
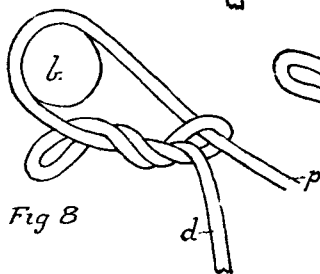
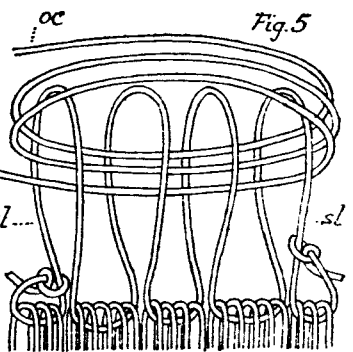
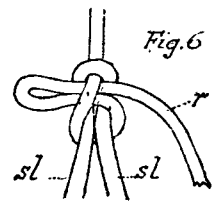
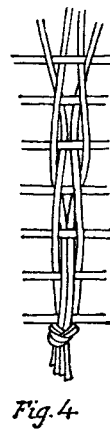
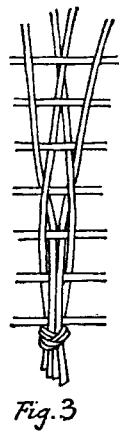
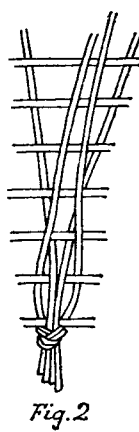
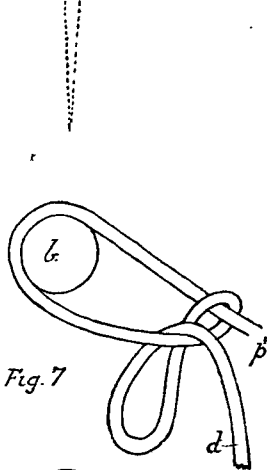
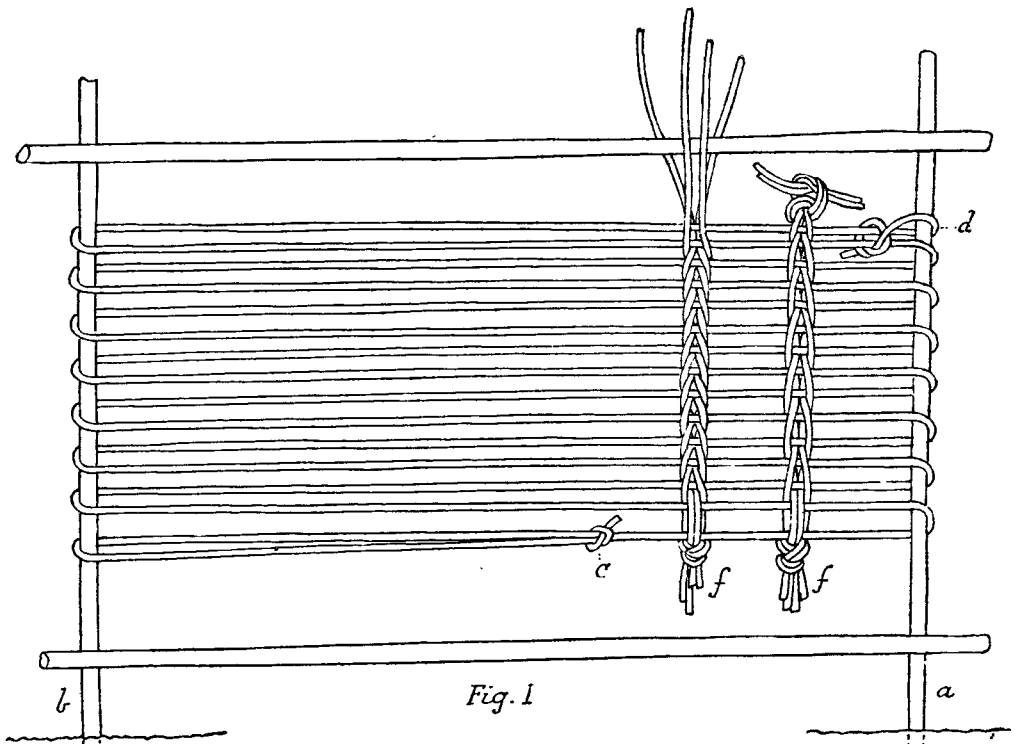
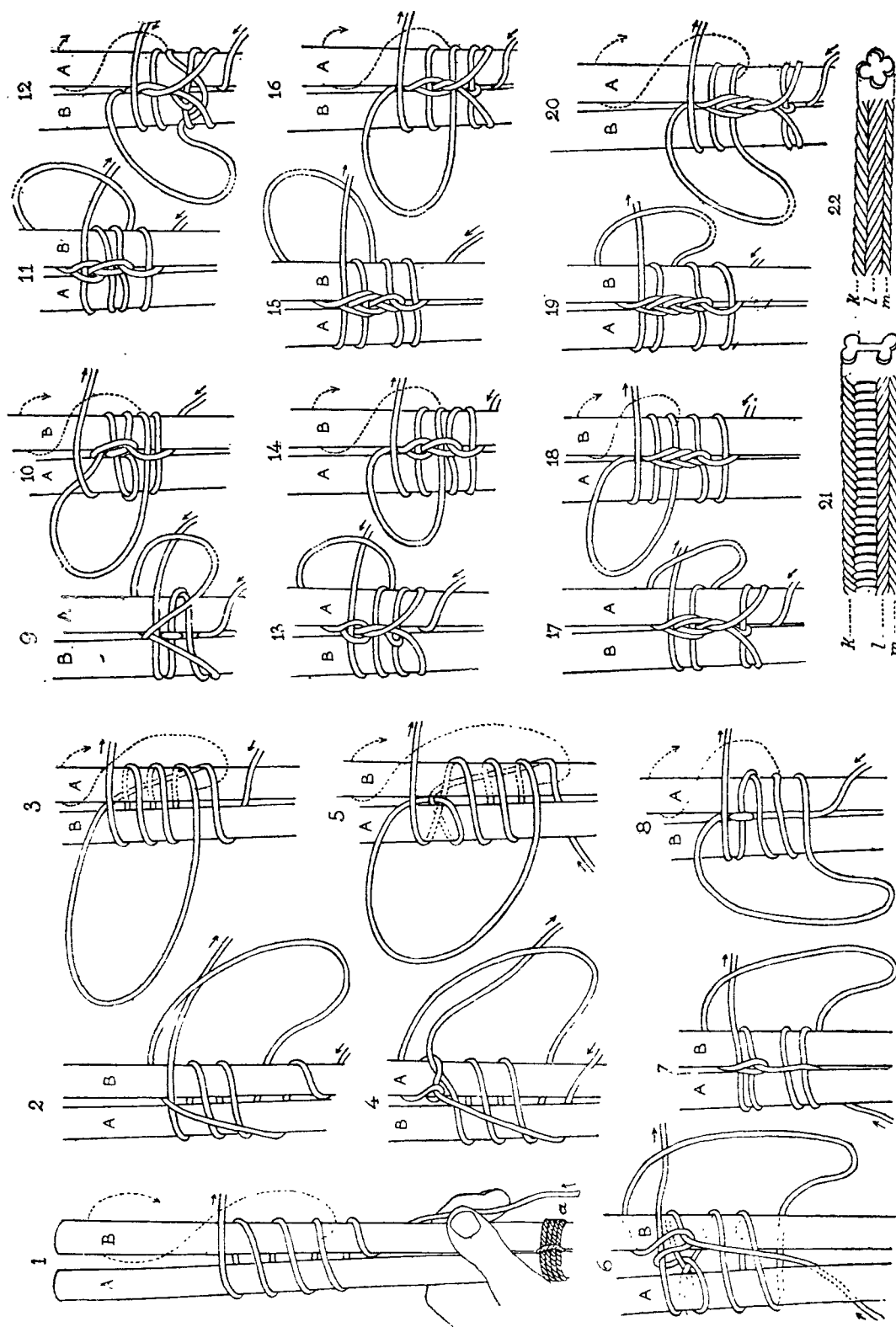


Fig 2

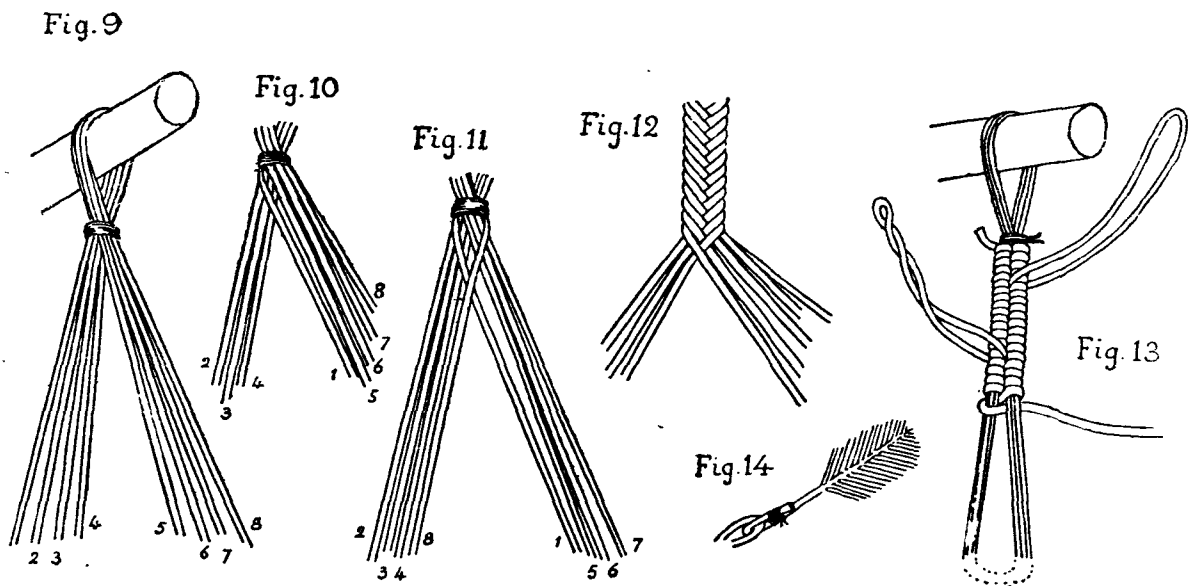
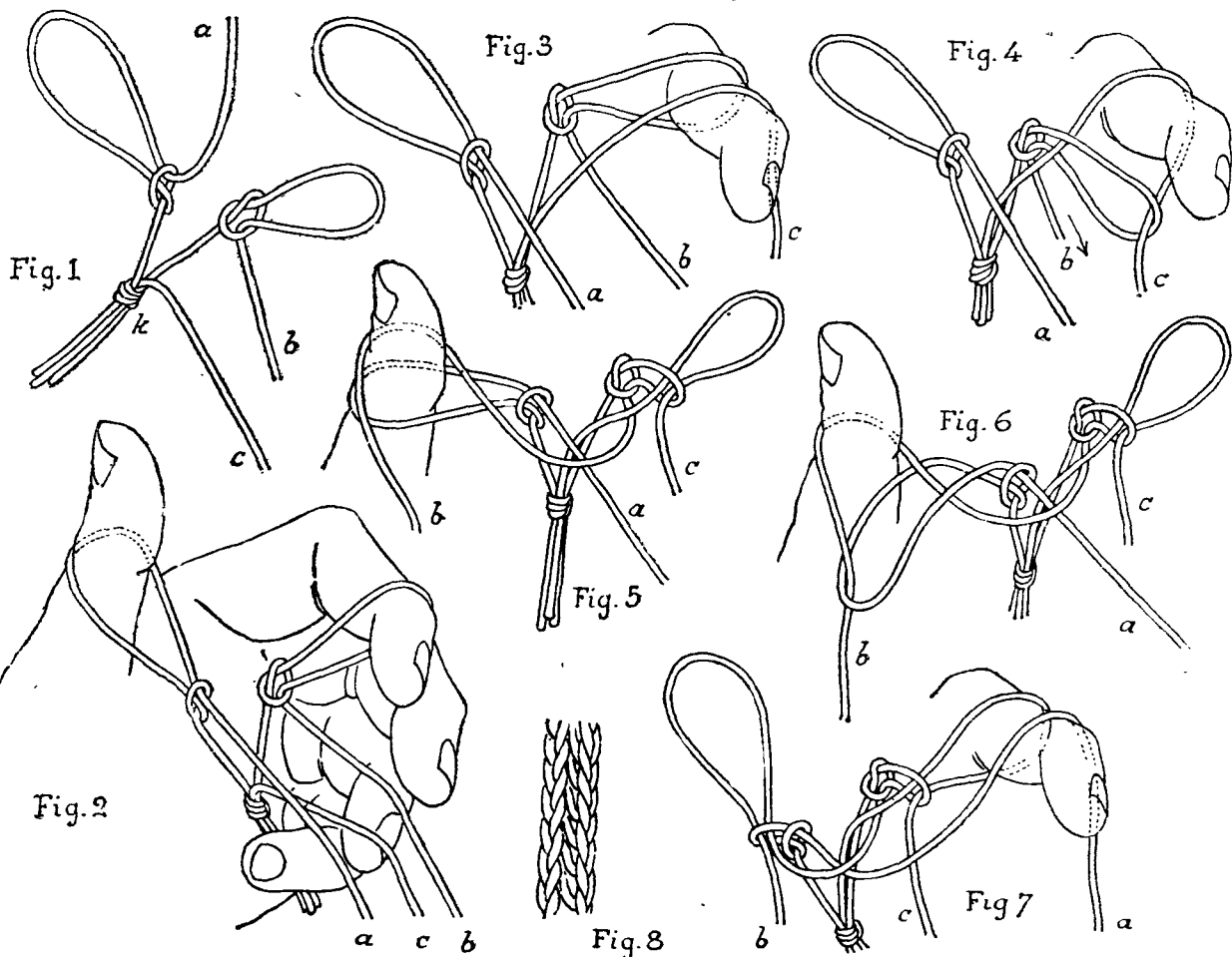


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W.E. ROTH

TECHNOLOGY OF THE POMEROON DISTRICT.



RĀJPUTS AND MAHRATTAS.

BY W. CROOKE, B.A.

THE question of the origin of the two great warrior tribes, the Rājputs and Mahrattas, who have exercised a commanding influence upon the national history, is one of the most important problems in the ethnology of India.

In the case of the Rājputs the current native belief, which has been generally accepted by ethnologists up to quite recent times, is that they represent the Kshatriya or warrior class of Manu's system. They were created, he says, from the arms of Brahmā for the protection of the human race. The modern Rājputs, without hesitation, assign their origin to the mythological period, one group of septs claiming descent from Soma, the moon, another from Sūrya, the sun god. Of the latter the noblest house say that they are sprung from Rāma, the deified hero of Ayodhya, and its genealogists have compiled a pedigree reaching back to a period higher than that of any European reigning family, the second century of our era.

But, as is often the case, Hindu tradition is inconsistent. The house of Udaipur accepts a legend which connects its line with the Sassanian dynasty of Persia.¹ A second story, which appears in various forms in classical Sanskrit literature, recognises a break between the early Kshatriyas and the modern Rājputs, telling how Parasurāma, the demigod, destroyed the Kshatriya race.² A third, which will be discussed later on, assigns the origin of certain septs to a rite of fire baptism.

Such traditions, however, have little affected the belief of the nobler septs and their Brahman genealogists who claim, to use the current term, pure "Aryan" descent. This term is generally used to describe the fairer type in the population of Northern India, as opposed to "Dravidian," which connotes the darker element. It is now unfortunately too late to revise our system of nomenclature ; but the objections to it rest upon the fact that both "Aryan" and "Dravidian" are linguistic not ethnical terms. Their use involves more than one misapprehension ; first, that the Aryans were a nation in the ethnical sense, and not a group of tribes united by a common language and culture ; second, that the darker races of the south are necessarily akin to those of the north, the latter, on the evidence of philology, being more probably of the Mon-Kmer family ; third, that it ignores the Negrito element in the Dravidians.

¹ Tod, *Annals of Rajasthan*, 1884, ii, 429.

² Wilson, *Vishnu Purāna*, 403 ; Muir, *Original Sanskrit Texts*, i, 156 f.

Sir H. Risley, on the evidence from anthropometry, assigns the Rājputs to the "Indo-Aryan" group, their cephalic index averaging 72·4.¹ These conclusions seem to depend upon the examination of 400 subjects; the names of the septs from which they were drawn do not appear, and even their locality is doubtful. They seem to be residents of the Panjāb, Rājputāna, and Kashmīr. Another set of figures collected much further east, in Oudh, gives 73 as the average cephalic index.² From this it would appear that the Rājputs of north-western India and of the Ganges valley represent a fairly uniform ethnical type. But it is now generally admitted that under the general title of Rājput septs of diverse origin and ethnical type are included. Sir H. Risley observes that Rājput is "a designation which outside Rājputāna proper does not necessarily imply any race distinction, and frequently means nothing more than that the people using it have or claim to have proprietary rights in land." Again, speaking of Bengal, he states that "besides a body of Aryan Rājputs, the large group designated indifferently by the name Rājput and Chhatrī includes many families of doubtful or non-Aryan descent, whose pretensions to membership of the twice-born or warrior caste rest solely upon the circumstances that they have, or are supposed to have, some sort of proprietary dominion over land." This higher class he thinks are "in many cases entitled to appeal to their markedly Aryan cast of features in support of their claim" to be regarded as "the modern representatives of the Kshatriyas of classical tradition."³ Mr. Gait, however, gives little support to the belief in the pure descent of the Bengal Rājputs. He observes that "at the present day Rājputs are comparatively unfettered in their matrimonial arrangements, and will give their daughters to men of lower origin who have attained a high position, and can afford to pay for the privilege; . . . it is at the discretion of the individual to give his daughters to persons whose claim to twice-born rank is very slender, provided they are of suitable rank and position."⁴ In the same way the recognition of the Khas tribe in Nepāl as Rājputs dates from the visit of Sir Jang Bahadur to England in 1850; and, in fact, all through the borderland many of the darker races have gained, or are gaining, Rājput rank.

In short, except some septs in the Panjāb and Rājputāna, it is now generally admitted that the modern Rājputs have largely absorbed non-Aryans of rank and wealth. Such people now employ Brahman priests, become devoted Hindus, and gradually gain *connubium* with the prouder septs. When, then, we use the term Rājput, we must not forget that it includes all sorts and conditions of men;—the proud tribes of Rājputāna, who though they may have little kinship with the original Kshatriyas of Manu, have by careful marriage regulations guarded the purity of

¹ *Census of India*, 1901, i, 502; *Ethnographical Appendices*, 9. Professor Keane (L. K. Anantha Krishna Iyer, *The Cochin Tribes and Castes* (1909), i, Intro. xxii) protests against the use of these compound terms, as being "for the most part meaningless, if not actually misleading."

² Risley, *Tribes and Castes of Bengal, Anthropometrical Data*, ii, 601.

³ *Tribes and Castes of Bengal*, ii, 184.

⁴ *Census Report, Bengal*, 1901, i, 351, 357.

their blood for many centuries; others quite modern upstarts, the "twice-born" of yesterday or the day before. Any European peerage discloses a similar state of things.

But it is in connexion with those septs of Rājputāna which claim purity of descent, that recent investigations, particularly the study of inscriptions, present a new view of their origin. This novel theory of Rājput origins is mainly the work of two Bombay scholars, the late Mr. A. M. T. Jackson, and Professor R. G. Bhandarkar.¹ Much remains to be done to complete this enquiry; in particular it may be hoped that the exploration of the shapeless mounds which cover the Rājput forts and cities in northern India will throw additional light upon the problem. Needless to say, we must discard the evidence of the sacred books of the Brahmans, which were compiled to support their theories of the relations of the "twice-born" to other classes of the population, and hence are of little ethnological value,

This new view of Rājput origins has been accepted by Mr. V. A. Smith,² who points out that the gap in tradition between the earlier and the later period, that is to say between the legislation of Manu and the appearance of the Rājput states in the eighth or ninth centuries of our era, is due to the inroads of foreign invaders. Even the original term Kshatriya was of vague significance, "simply denoting the Hindu ruling classes which did not claim Brahman descent." The earliest foreign invasion of which we know anything definite was that of the Sakas or Scythians in the second century B.C., followed by that of the Yueh-chi or Kushāns in the first century A.D., and, after a long interval, in the fifth and early sixth centuries, by that of the Hūnas or Huns. The results of this long period of foreign domination are still obscure. It is possible, but not proved, that the Saka chiefs were admitted into the Hindu system as Kshatriyas or Rājputs; but none of the existing Rājput tribes carry back their pedigree to this early period. With regard to the group of tribes known collectively as Huns, the information is more precise. In their train the powerful Gurjara tribe, whose name survives in that of the Gūjars of the present day, invaded northern India. It has now been definitely proved from the inscriptions that these Gurjaras were adopted as the Pratihāra sept of the Rājputs.³ In the same way, Mr. D. R. Bhandarkar has shown that the Guhilots or Sisodiyas of Mewār, the proudest of the Rājput septs, were originally Nāgar Brahmans, priests of the Gurjuras. In short, their tribal priests became first Brahmans and then Rājputs, a fact which shows how vague the conception of tribe and caste was at this period.⁴

Further, it is clear that the five "fire-born" tribes of Rājputs, if not of pure Gurjara or Hun descent, were, at any rate, members of the same great horde of

¹ *Bombay Gazetteer*, i, pt. i, 467; ix, pt. i, 433 ff.

² *Early History of India*, second edition, 373 ff.

³ V. A. Smith, "the Gurjaras of Rājputāna and Kanauj," *Journal Royal Asiatic Society*, January-April, 1909.

⁴ *Journal Asiatic Society of Bengal*, 1909, pp. 167 ff., cf. J. Kennedy, *Imperial Gazetteer of India*, 1908, ii, 303 ff.

invaders. Then followed a period of relief from the incursions of the foreigner during which the neo-Hindu beliefs were formulated and the present Rājput septs came into existence. The metamorphosis of these foreigners into Rājputs seems to have occurred just about the time, A.D. 800, when the genealogies of two leading septs begin. The legend which tells that on the sacred mount Abu the Sage Visvāmitra produced these septs out of the holy fire-pit now becomes intelligible. It represents a rite of purgation by fire, the scene of which was in southern Rājputāna, whereby the impurity of the foreigner was removed and they became fitted to enter the Hindu caste system. In the same way when Sītā, the heroine of the Rāmāyana, was charged with infidelity she re-established her honour by passing through the fire of purgation, and parallels of the same rite appear in the early Mohammedan historians and in European and other cults.¹ It has been plausibly suggested by the late Sir J. Campbell that "the object of the rite was to create out of this body of foreigners a chosen class of Rājputs, who being fire-created would be special champions of the Brahman order in its struggle with the rival Buddhist and Jain religions."²

A study of a primitive branch of the tribe in the Panjāb enables us to understand how the Rājputs gained their position. In the hills we find what Mr. Rose describes as "a type, and undoubtedly a very ancient type of Hindu society which has been practically untouched by Mohammedan influences, though possibly Buddhism may at one time have affected its development. . . . Caste, in the accepted meaning of that term, may be said not to exist. The highest stratum of society is composed of a number of tribes which split up into several groups of different social status, and which are generally called Rājputs. Below these Rājputs are the cultivating classes, the Kanets and Ghirths, and below them the artizans and menials," these all being merely status groups in a population physically homogeneous. As we have seen is the case with the Sisodiya Rājputs of Mewār, two of the old and essentially Rājput families in Kangra are Brahmans by original stock. Even in the east and south-east plains of the Panjāb the same condition of things prevails. Here we find a number of organisations which are status groups rather than tribes; that is to say, as Mr. Rose states the case, "Rājput means simply 'descendant of a Rājā or ruler,' and it is also certain that the term is a purely functional one." "In former times," he goes on to say, "if not now, status could be gained by royal favour, for a Rājā might promote a Ghirth to be a Rathi, or a Thākur to be a Rājput, for service done or money given. By giving a daughter to an impoverished Rājā a rich Rathi may raise his clan—not merely, it would seem, himself or his family—to Thākur Rājput status. If a Rājā takes a Patial girl, whom he has seen tending cattle and fallen in love with, the girl's whole clan begin to give their daughters to Miāns, and gains a step in social rank. On the other hand, by practising widow marriage, or by giving a daughter to an inferior grade,

¹ Elliot-Dowson, *History of India*, i, 329 f. ii, 169; Frazer, *Pausanias*, iii, 53 f.; Farnell, *Cults of the Greek States*, iv, 295.

² *Bombay Gazetteer*, ix, pt. i, 486 f.

status could be diminished or lost." Now, according to Mr. Barnes,¹ the Rathi are an amalgamation of the Kshatriya and Sūdra class, and the Ghirths have a strong infusion of Mongoloid blood. It is out of such material that the "Indo-Aryan," twice-born Panjāb Rājput has been created.

Mr. Rose sums up his valuable account by the remark that even now Rājput society is in a state of chaos, and that it is hardly possible to give any clear account of its various ramifications. Any such account would probably be obsolete in a few years, the fluctuating element being the sept or at least the families, which are continually rising into a higher grade or falling below it. The natural inference is that among some at least of the Panjāb tribes Rājput is not an ethnical term, but connotes a status group.

With the Rājput problem in the Panjāb is closely connected that of the Jāts and Gūjars. The latter tribe, as we have already seen, is probably of Hun descent. The evidence seems irresistible that the Jāts must be included in the same ethnical group. In the Panjāb there is the uniform tradition that the Jāts come from the same stock as the Rājputs. "Even now Rājputs and Jāts occasionally intermarry, the Rājputs taking wives from the Jāts but refusing to give them their own maidens in return. What is now the exception is said to have been the rule in earlier times. In short, both social and physical characters are those of a comparatively homogeneous community which has been but little affected by crossing with alien races."² The popular belief is that the Jāt is a Rājput degraded from a higher rank because he permits widow marriage, does not seclude his women, and so on. But, as Mr. Fagan³ suggests, the process was probably reversed, and it is the Rājput who has risen, while the Jāt has remained stationary.

Sir D. Ibbetson believed it to be "exceedingly probable both from their almost identical physique and physical character, and from the close communion that has always existed between them, that they belong to one and the same ethnic stock; while, whether this be so or not, it is almost certain that they have been for centuries so intermingled and blended into one people that it is practically impossible to distinguish them as separate wholes."⁴ The testimony of Mr. Rose is to the same effect. He remarks that in the oldest form of society in the western Panjāb we find a purely tribal organisation with no well-marked social cross-divisions. "As we go further east, we have the distinction between the Jāts or peasantry and the Rājputs or gentry more and more sharply defined until, when we reach the Jumna valley, we find that these social grades have crystallised into castes." He believes that the relation between the Rājput on the one hand and the Jāt and Gūjar on the other to have been originally hypergamous; that is to say, they were subject to the social law which compels a man to find a husband

¹ Ibbetson, *Punjab Ethnography*, 252, 270.

² Risley, *The People of India*, 48.

³ Crooke, *Tribes and Castes of the North-Western Provinces*, iii, 27.

⁴ *Punjab Ethnography*, 220 f.

for his daughter equal or superior in rank to his own, while he may himself select his wife, or at any rate his second wife, from a group of inferior standing. This condition of things would naturally be promoted by the custom of female infanticide which was, and is, common among Rājputs, Jāts, and Gūjars.

It is quite true, as Mr. Rose explains, that at the present day "neither territorial sovereignty, nor the avoidance of widow marriage, nor refusal of the bride-price, will raise a tribe to the status of Rājput, a fact all the more remarkable in that many Jāt tribes have traditions of Rājput origin." But this amounts only to saying that in modern times the caste system under Brahman guidance has become so rigid that the position or the groups is now definitely fixed, and there is as little possibility of a lower caste or tribe being promoted, except under the fiction that they always did belong to the higher grade, as there is that *connubium* between the members of one tribe with those of another could now be recognised. But these restrictions are comparatively modern, and were certainly not in force when these groups were originally formed. As Mr. Rose shows, the Jāts "comprise a vast congeries of tribes which are practically on a dead level of equality, although some of them have a vague and undefined superiority over the mass of the Jāt race." Elsewhere, accepting a view of their origin such as that now advocated, he points out that they are in no sense homogeneous, differing probably in origin, and certainly in social status, customs, and religion.¹

Sir H. Risley also agrees that the Jāts are not homogeneous, one type approaching "most closely to the traditional Aryan colonists of India. The stature is mostly tall; complexion fair; eyes dark; hair on face plentiful; head long; nose narrow and prominent, but not specially long." Elsewhere we find the Jāt recorded as the "type specimen" of the "Turko-Iranian" variety, with a cephalic index averaging 79.2.²

The argument that the Huns and Scythians must necessarily have been a brachycephalic race, and that this race could not have given rise to Rājputs and Jāts, can be met in more ways than one. In the first place, the Indian victims of these invaders may have used the terms Saka or Scythian and Hūna or Hun without much precision, in the vague sense that they were people from beyond the Himālaya. It is perhaps possible that, like the armies of later invaders, such as Bābar or Nādir Shāh, the forces of the earlier invaders were recruited from the floating population of Central Asia. There is, according to the latest authority, Dr. Stein, a Turki type in Central Asia, which was possibly in origin Mongoloid, but through contact with peoples of the Caucasian race has become profoundly modified, and now retains little of its original characters.³ Lieut.-Colonel Waddell found among the Tibetans two types:—"the one round-headed, flat-faced, and oblique-eyed, approximating to the pure Mongol from the Steppes (Sok); the other longer-headed with nearly regular features, a fairly shapely long nose with a good

¹ *Man*, viii, 98 ff.

² *People of India*, 32; *Census Report India*, 1901, *Ethnographical Appendices*, 2.

³ *Journal Royal Anthropological Institute*, xxxiii, 315; cf. Keane, *Ethnology*, 305.

bridge and little of the Kalmuk eye, approximating to the Tartars of Turkestan and the nomads of the Great Northern Plateau (Hor)."¹ The nobility and higher officials generally belonged to the latter type. Again Mr. J. Kennedy points out that all the invading tribes, Saka, Yueh-chi, and Hūna, had spent at least a century in Turkistan before they invaded India, were all profoundly influenced by their Iranian environment, had to some extent absorbed Iranian blood, and were largely Persianised in culture. This was certainly the case with the Ephthalite Huns; and he believes it to be clearly proved that the Yueh-chi were of Turkish stock. With regard to the Saka he recognises two branches of the tribe:—the first dwelling in Ferghāna and on the Jaxartes, driven out by the Yueh-chi, and now represented by the Balti, the Bolitai of Ptolemy; the second, the people of Sakastene, who settled between the Indus and Gujarāt, a branch including some members akin to the Turki type. Scythian remains from Kertsch and Kum Olba show that this people were essentially of the Iranian type, modified by the influence of environment into resemblance to the modern Russian Mujik.²

Secondly, it may be urged that further inquiries will show among Rājputs and Jāts a higher degree of brachycephaly than is disclosed in the present statistics drawn from a limited number of measurements. Thirdly, the form of the skull, the human character least subject to modification, possesses a certain degree of variability, and may have been influenced by the Indian environment. Dr. John Beddoe has shown that the inhabitants of our cities develop a longer and narrower head than residents in the country.³ The same view has recently been accepted by Professor A. Thomson and Professor Flinders Petrie.⁴ Secondary characteristics, like colour and stature, are still more variable. The influence of sexual selection, again, must not be ignored. Caste, of course, does restrict the area whence brides may be selected; but even now the friends of the bridegroom carefully examine the proposed bride, and reject her if she be ugly, sickly, deformed, or in other ways unsuited to married life. Mr. Gait reports that the refined appearance of the Tagores in Bengal is due to the selection of good-looking brides for their sons.⁵

If, then, a "zone of broad-headed people can be traced southwards from the region of the Western Panjāb," there seems little reason to seek elsewhere for survivals of the Scythian and Hun tribes. We should naturally expect to find them in those parts of the country which they certainly occupied for a considerable period. The chief centres of the Scythian power were the Kābul valley, the Panjāb, and Kāthiāwār. The region over which the Hun raids and dominion extended was practically the same. It seems therefore unnecessary to trace them in Southern India. There was, it is true, a Saka or Scythian dynasty, known as the Western Kshatrapas or Satraps, which occupied the country known as

¹ *Lhasa and its Mysteries*, third edition, 346.

² Rayet, *Études d'archéologie*, 196 ff.

³ Huxley Memorial Lecture, *Journal Royal Anthropological Institute*, xxxv, 219 ff.

⁴ *Ibid.*, xxxiii, 148; xxx, 219; cf. Prof. Ridgeway, Presidential Address, British Association, Section H, *Report*, 832 ff.

⁵ *Census Report, Bengal*, 1901, i, 364.

Saurāshtra, whence the modern town of Sūrāt takes its name. But there seems to be no evidence that this dynasty was more than a line of chieftains ruling over the indigenous races. From the absence of coins and inscriptions in Mahārāshtra or the Deccan plateau, they never seem to have occupied that part of the country. Their stay there, at the best, according to Professor Bhandarkar, lasted only about fifty years.¹ Still less is there any historical evidence for the belief that they extended as far south as Coorg near the extremity of the Peninsula. The view, in short, that the Scythians were driven before the advancing Aryans into Southern India seems to have as little foundation as the theory that tribes like the Kols and Santāls are the débris of races from the plains driven into the hills by the Hindus, or that of Freeman and his school that the British inhabitants of these islands were banished to the Welsh hills by the English conquerors. The saner view is that they remained in the country which they had always occupied, and were absorbed by their conquerors.²

It is unnecessary here to discuss the causes of the presence of a brachycephalic strain in Southern and Western India. It need not necessarily imply a Mongoloid invasion from Central Asia. The western coast was always open to the entry of foreign races. Intercourse with the Persian Gulf existed from a very early period, and Mongoloid Akkads or the short-headed races from Baluchistān may have made their way along the coast or by sea into Southern and Western India. But it is more probable that this strain reached India in prehistoric times, and that the present population is the result of the secular intermingling of various race types, rather than of events within the historical period.

The origin of the Mahrattas, who have been connected with the Hun and Scythian invaders, is fairly clear. The main element is that of the Kunbī or Kurmī, a tribe widely spread in Northern and Western India. The Mahrattas form the higher status group of these people, and they seem to have pushed themselves to the higher social scale like the Rājputs of the north. Even now the difference between Mahratta and Kunbī is mainly social, both groups eating together and intermarrying, while they agree in appearance, religion, and customs. It is only in quite recent times, under pressure from the Muhammadan powers and under the rule of Sivaji, that their scattered septs have become consolidated into a single nation. Early Deccan history shows them to have been a mass of ill-organised groups, in no sense a homogeneous nation. The higher class Mahrattas have now satisfied the blue-blooded Rājputs of Udaipur that they are of their kin, a fact which Mr. Enthoven adduces as a proof that they are really of Rājput origin.³ It is rather the result of a rise in status among both Rājputs and Mahrattas. The same authority now recognises the difficulty of tracing a Saka element in the population of the Deccan. "The present population," he now believes to be "in origin more homogeneous than is generally assumed, and the

¹ *Bombay Gazetteer*, i, pt. i, 168.

² Hodgkin, *Political History of England*, i, 110 f.

³ *Census Report, Bombay*, 1901, i, 184.

tribes and castes differ mainly in the extent to which they have evolved from a primitive social organisation which still characterises the lower units, and of which traces are still visible, as survivals in the higher."¹ No doubt in modern times the Mahrattas have absorbed Rājput blood. Sivaji himself claimed descent from the Udaipur family through an irregular connexion of a Rājput with a woman of lower rank. His portrait, preserved by Orme, represents him with a prominent, well-shaped nose, of the Duke of Wellington type, and a cast of features, which if not quite Rājput in character, is neither Scythian nor "Dravidian."²

The suggestion, again, that the success of the Mahrattas in organising predatory raids on horseback is a survival from their Scythian ancestors, will not bear examination. Skill in horsemanship is equally a characteristic of the Rājput, and even the despised Jāts furnish, in the 15th Lancers, Murray's Jāt Horse, one of the crack cavalry regiments in the Indian army. The success of the Mahrattas as light cavalymen was mainly the result of local conditions in the Deccan, where the indigenous pony, an admirable beast, had been improved by the introduction of Arab blood from the Persian Gulf. This trade flourished in the days of Marco Polo, and probably dates from a very early period.³

It may naturally be asked whether this intrusive Scythian and Hun element has left any traces of religion, manners and customs in the population amidst which it became absorbed. Hinduism has always possessed a marvellous power of assimilating the cults and customs of the foreigner. Kanishka, the Kushān ruler (*circa* A.D. 120–150) soon after his arrival in India embraced Buddhism. Vasudeva, who came to the throne about A.D. 185, has a regular Hindu religious name, and his coins bear images of Siva and his bull, with the other common Hindu symbols. Doubtless all the foreign races became rapidly Hinduised. Colonel Tod, whose views on the existence of a foreign strain in the Rājputs were much in advance of his time, suggests many instances of beliefs and usages which he supposes the Rājputs to have received from the foreigner. Few of his suggestions would now be accepted. It is possible, however, that the extension of the cult of Siva and the later forms of sun and fire worship may have owed something to foreign influence. Now that the question has been raised it is possible that further investigation of Rājputs and Jāts will supply additional examples.

The problem of the origin of the Rājputs is so complicated, and the historical record is so defective, that it may be rash to offer the present solution of the question. The points which I have endeavoured to establish in this paper are:—first, that the epigraphical evidence indicates a considerable strain of northern blood among the tribes of the Panjāb and Rājputāna; secondly, that the Rājputs, Jāts, and Gūjars are ethnically akin, that their position depends upon status, the

¹ Presidential Address, Anthropological Society, Bombay, *Pioneer Mail*, March 5, 1909.

² Douglas, *Bombay and Western India*, i, 331.

³ Marco Polo, ed. Yule, third edition, ii, 340, 348 f.

Rājputs having become the aristocratical body, while the Jāts and Gūjars have remained agriculturists and cattle-raisers; thirdly, that the position of the Mahrattas is identical with that of the Rājputs; fourthly, that in considering the question of the assimilation of foreign races in India, attention must be paid to the influence of environment and sexual selection; fifthly, that the theory that a Hun or Scythian element is to be traced in the population of the Deccan is inconsistent with the facts of tribal history, so far as they can now be ascertained.

NOTES ON THE TRIBES INHABITING THE BARINGO DISTRICT, EAST AFRICA PROTECTORATE.

BY HON. K. R. DUNDAS.

[WITH PLATES XV-XVII.]

BARINGO District comprises an approximate area of 10,000 square miles and is one of the largest districts in the East Africa Protectorate.

On the north the district is bounded by the south shore of Lake Rudolph ; on the south by the south end of Lake Hannington ; on the east by the eastern wall of the Rift valley ; on the west by the Kamasia range of hills, the north end of the Elgeyo Escarpment and the Tirkwel River.

Two classes of natives inhabit these regions ; the pastoral, nomadic tribes of the plains and the agricultural people of the hills. To the former belong the Suk and the Turkana ; to the latter the Kamasia, Chebleng, Ndo, and Hill Suk.

The population of the plains is small and widely scattered. The country, except at the foot of the hills, is rocky and barren ; further north the rocks give place to great stretches of loose, drifting sand dotted with rows of palms, that mark the courses of dry river beds.

The south end of the district is well watered, but north of Lake Baringo and away from the hills permanent running water is obtainable only in the rivers Kerio, Sogota and Tirkwel, and even these dry up in their lower reaches towards Lake Rudolph. The Sagota is at its source a broad stream of hot, salt water, undrinkable except after heavy rains.

Water, however, can be obtained in a great number of places by digging in the sandy beds of rivers such as the Ngingyang¹ and Kito, and in a few places there are water-holes, that furnish during most months in the year an ample supply of good potable water.

In the low-lying parts the heat during the day is very great ; so great indeed that the natives rarely venture out between the hours of 10 a.m. and 4 p.m.

At the present day, Baringo district is inhabited by the following tribes :—Turkana, Suk, Kamasia, Chebleng, Ndo and Njamus.

NJEMPS.

The Njamus are a mixture of several different tribes ; the total population does not exceed fifteen hundred souls. They occupy two large villages known as Njemps Kubwa or Njemps Liabori, and Njemps Ndogo, or Njemps

¹ Ngingyang is Samburu for crocodile ; the name was probably given on account of the crocodiles that inhabit the pools and water-holes of this river : when the water dries up they burrow in under the sand and lie up until the advent of the rains.

Lekepir¹; the former is situated on the Molo River, the latter on the Tigrish; both are close to the south end of Lake Baringo.

It is hard to say how long these two villages have existed; the earliest inhabitants, of whom we possess any information, were a people known as Il Gerol. Beyond the fact that they lived by hunting and fishing and also cultivated a little, we know nothing about them. I think, however, that it is possible that they may have been of the same stock as the Kamasia. Further on, I shall give an account of some Njemps customs that are said to be survivals from the days of the Gerol.

The greater portion of the present Njemps population are survivors of a Samburu tribe called Il Doigio.

About seventy to a hundred years ago the Doigio were settled on Loroghi. Loroghi is a high-lying plateau above the Rift Valley in Baringo district; the descent into the valley below is most precipitous; the traveller crossing this plateau from the north will not catch his first glimpse of Lake Baringo until he reaches the very edge of the escarpment. The grazing is magnificent, but the country is subject to long spells of drought, and, at the time of which I am speaking, the Doigio cattle were dying for want of grass. Now it happened, that one day, when the drought was at its worst, an old man lying under a tree, as is the custom of old men, saw a bird come to the tree holding in its beak a blade of green grass. In the evening, therefore, he summoned the tribe to assemble by blowing the village horn, and when all were gathered together, addressed them thus:—"To-day, the heat of the sun being very great, I went and lay under a tree, and presently I saw a bird come to the tree, in which it was building a nest, and in its beak it held a blade of green grass. Select therefore forty young warriors and let them follow this bird and see whence it obtains the green grass."

The following day a party of young men set out accordingly, and proceeding due west came to the edge of an escarpment, from whence they beheld a wonderful view of a great lake and in the far distance at the south end a plain of fresh green grass. Far below they saw Naudo and the Nginyang River, its banks lined with great trees, and nearer at hand Mount Paka. Descending into the valley and passing by this mountain they came to the north end of Lake Baringo. Skirting its rocky shores they proceeded onwards and at length reached the plains of green grass; seeing here, however, the smoke of fires they decided to return and report to the old men of the tribe their discoveries; but the old men said, "Return again and find out who the people are whose fires you saw, and what rivers flow into the lake where you saw the green grass."

So the young men went again, and passing this time along the east shore of the lake came first to the River Tim and a little farther on to the Rivers Molo and Tigrish, where they found a colony of hunters and fishers.

Returning again to their villages they related all that they had seen, and it

¹ Liabori and Lekepir mean down stream and up stream respectively.

was immediately decided by the elders of the tribe to move to this El Dorado of rivers, lakes and green grass. The old men, however, went first and made friendship with the Geroi, explaining to them that their only desire was to graze their stock and live in peace.

Thus the Doigio came to Baringo, and though I think we may relegate the greater part of this story to the region of other similar myths and fables, it bears witness perhaps to two significant facts; namely, that the Doigio on their first arrival were but a very small tribe, and that they found the shores of Lake Baringo uninhabited.

When next we hear of them, they have become a most numerous and powerful people, occupying the whole country from Naudo in the north to Maji a Moto, or Konyek, as they called it in the south. We also hear of them being at this time politically allied with the Laikipiak, who had by now established themselves on Loroghi and Laikipia.

Most probably these first early arrivals were merely the advance guard of a considerable invasion of Samburu, who were being forced southwards by the Laikipiak tribes, who now for the first time made their appearance in East Africa.

Whilst this section of the Samburu was establishing itself in Baringo District, another section called the Lorogishu was spreading down from the Angata e'-m-barta¹ on to the Sogota and as far south as the river Lomello. The Lorogishu were known to the Suk as the Kwakituk²; they shared the Angata e'-m-barta and lower Sogota with a Rendile tribe called the Naroshon.

A third section known to the Suk as Lobbeyok³ took possession of Ngingyang, the Sogota, as far as the Lomello, and Tiati, called Il Maruroi by the Samburu.

All three of these clans on their arrival found the Turkana in possession of the country north of Lake Baringo and drove them out.

How long the Samburu occupation of these regions lasted is difficult to say; it must, however, have been of some considerable duration, judging from the numerous stone graves scattered throughout the country, which are now the only traces left of what must once have been a very powerful tribe.

The end came when a Masai tribe called Segellai,⁴ having recently moved down to Nakuru from the Mau, made a sudden raid on the Doigio, killing enormous numbers of them and carrying off the greater part of their stock.⁵

Their strength being thus shattered the Samburu fell easy victims to their old enemies the Turkana, who seeing now their chance, joined forces with the Suk and

¹ The Angata e'-m-barta is a plateau of about 4,000 feet elevation to the north of Loroghi.

² Kwakituk is the Suk name for the Angata e'-m-barta.

³ Lobbeyok is the Suk name for the Samburu; possibly it was also the name of this particular clan, which was most probably the first with which the Suk came in contact.

⁴ The Segellai were subsequently wiped out by a combination of Laikipiak, Tigirri and Masai.

⁵ Water and grazing being limited, the Samburu would be scattered over a very large area, and hence would not have time to organise a resistance on an adequate scale. The tribes occupying Baringo district have all been good fighters, but scattered, as they necessarily must be, over a wide area; they have again and again succumbed to sudden surprise attacks

drove them out of the district. Many of the Doigio fled to Njemps: not a few, after the manner of African natives, took refuge with their enemies, the Suk and Turkana. The majority, together with the Naroshon, abandoning Baringo district, returned to the Angata e-'m-barta and Mt. Ngiro.

One small band made its home in the rocky mountainous mass of Moruang-hakhulakh, where for years they annoyed the Turkana by pilfering their stock: hence the name Moruanghakhulakh or "Hill of Thieves."

A great many also fled to the foot-hills and slopes of Loroghi, where they still survive, eking out a precarious existence as Dorobo¹; and these also to this day continue lifting the stock of Suk and Turkana villages, that move up close to the hills in the dry weather.

Just about the time the Doigio joined the Geroi, there appears to have been also an influx of Laikipiak Dorobo. For a time all three sections lived together fairly peaceably, but ultimately trouble arose, and one day whilst out hunting, the Laikipiak and Doigio fell upon the Geroi, and treacherously massacred a large number of them; many of the survivors fled to Nakuro, and thence are said to have made their way to a people called Il Kakesan by the Masai. By Il Kakesan is meant the Lumbwa, who call themselves Kipsikis. Putting two and two together I conclude that these Geroi joined the Segellai and accompanied them, when, after their defeat by the Laikipiak, Masai and Tigirri, many of them fled to Lumbwa.

Up till now, the inhabitants of Njemps, possessing no stock, which their neighbours might covet, had remained unmolested. The Doigio, who now joined them, probably brought with them a certain amount of cattle, which they had managed to save from the wreck of their fortunes, and the small settlement at once became the legitimate prey of every tribe that aspired to the possession of stock and was strong enough to take it by force. From now onwards, therefore, the Njamus led a most precarious existence. No sooner did they acquire a little property, than they were promptly raided by Suk, Turkana or Laikipia Masai—generally by the latter. As a protection against enemies they erected a strong zariba round their village, and behind this they were frequently besieged for days at a time.

The following is a list of the tribes and clans of the Njamus population of the present day :—

Laikipiak :

1. Il Kabes.
2. Loiborgishu ('L-ooibor-kīshu).
3. Il Barsegir.

The Loiborgishu were a branch of the 'Ngang Elimā clan; the Barsegir of the Lornying.

¹ Poor natives, who gain their living by hunting, cultivating and selling honey. It is a term usually applied to members of a pastoral tribe, who own no stock, called Il-Torobo by the Masai.

Samburu :

1. Il Mayek.
2. Ol Barasaero.
3. Ol Ouara.
4. Loimüsse.

The Mayek before proceeding to Njemps are said to have first resided for some time with the Il Chabichab section of the Kamasia.

The Ouara is identical with the Lugumai clan of the Masai.

Il Doigio :

1. Ol Doimal.
2. El Gungwan.
3. Ol Gesiani.
4. Ol Murtanat.
5. Ol Gessei.

The Njamus always distinguish between the Doigio and Samburu, though I think they were all one tribe.

Kamasia :

Masari, who came from the Owolell section of Kamasia.

Uasin Gishu :

Barsaina.

This clan is said by some to have belonged to the Moiven tribe; having repeatedly raided the Njamus, they later, when raided in their turn, took refuge with them.

Il Geroi :

1. 'Ngang Lessamagan.
2. 'Ngang Ngissegir or Lebarkilenya.

In addition to the two settlements on the Molo and Tigrish Rivers there is a third called Korvan, that formerly in troubled times resided on the islands in Lake Baringo, but now most of them live on the mainland near the River Tim.

The first native to move to the island was an old man called Logogwa. He was followed by others and amongst them by an Uasin Gishu (or Il Moiven).

These islanders use a small canoe made of basketwork. I am inclined to think that the original inhabitants were not, as the Njamus themselves state, Il Doigio, but either Il Geroi or survivors of some other now extinct tribe.

All the Njamus are expert swimmers, a somewhat rare accomplishment amongst many of the native tribes of East Africa.

The Njamus, or Nyarusi as they are called by the Laikipiak, speak the Samburu dialect, which is nearly akin to Masai, in appearance, manners and custom they resemble the Masai: their military organisation is the same, and like that tribe they celebrate the *unoto*, the great festival of the Masai warriors.

The Njamus possess a certain amount of stock, most of which they have acquired since the advent of the British Government; but theirs is not a stock country, and

they are primarily an agricultural people. They are expert fishers and absolutely fearless hunters.

In connection with their plantations they have some very curious customs. These are watered by a ditch dug during the dry season. A narrow wall of earth is left standing at the mouth until the time is come to irrigate the crops. The ceremony of opening the ditch is conducted in this wise:—Ten elders of the tribe are chosen; they must be of an age not younger than the Il Derito, which is the age preceding that of the Il Merishu, the age of the warriors of the present day. They are chosen to assist at the ceremony, not to perform it themselves; this is reserved for a member of the Il Mayek clan, the only clan competent to do so. On the appointed day the party proceeds to the ditch and, killing a sheep of the colour called *sirwa* by smothering it, after the Masai and Samburu fashion, its melted fat, dung and blood is sprinkled at the mouth of the furrow and in the water; the ditch is then opened, after which the meat of the slaughtered sheep is consumed. The Il Mayek binds the skin of the sacrificial sheep round his head and wears it thus for two days.

Any male member of the Il Mayek clan may perform the ceremony, but no one else, and, unless an Il Mayek is there, water will not flow in the ditch. No other persons than these eleven men are permitted to be present.

The elders chosen to assist at the ceremony may not cohabit with their wives after this until the harvest, and hence are obliged to sleep at night in their grain huts.

During the time the water is irrigating the crops, no one may kill or eat a waterbuck, eland, oryx, zebra, rhino or hippo. Should anyone be found doing so, he would at once be cast out of the village.

Should anyone quarrel during this time with the Il Mayek, the water will cease flowing in the ditch, and should this clan become angry and remain so for more than ten days, the water in the ditch will dry up permanently for that season. Needless to say the Il Mayek enjoy great consideration in the tribe. Later, if the crops are not coming on well, recourse is had once more to medicine.

There are three clans, any member of which is competent to officiate. They are the 'Ngang Lessamagan, the 'Ngang Ngissegir and the Il Mayek. Which particular clan is employed depends on the locality of the plantations in the particular season. Thus the 'Ngang Lessamagan performs the ceremony, when the crops are sown down near the Molo river; the 'Ngang Ngissegir, when they are sown towards Campi ya Samaki at the south-west corner of the lake; the Il Mayek, when they are towards Njemps Dogo. If no member of the clan is available, an Il Kabess may take his place.

The ceremony is performed thus:—Two elders of the officiating clan are chosen and two from any other two clans. These four proceed to the plantations with a sheep of the colour called *sirwa*, and having killed and eaten it, they cut up the skin, and each of them binding a strip round his head, which he wears for two days, the party divides and, proceeding in opposite directions, walks round the plantations sprinkling fat, honey and dung on the ground, until they meet once

more on the other side. No other persons may be present during the ceremony, neither may anyone enter the plantations for two days after.

The following is the Njamus calendar :—

Wet season called Larc.

March	...	<i>Oani-oingok</i>	...	When the bulls have to be tied up.
April	...	<i>Borgola</i>	...	Much rain.
May	...	<i>Loo-n Gokwa</i>	...	Pleiades disappear.
June	...	<i>Lorigine</i>	...	„ reappear in the east in the early morning.
July	...	<i>Lakodakol</i>	...	Great rains.
August	...	<i>Lekipin</i>	...	„ „
September	...	<i>Lolrochorot</i>	...	Little rains.
October	...	„	...	„ „
November	...	„	...	„ „

Hot season called Ngolony.

December	...	<i>Gulua.</i>
January	...	<i>Rialbala.</i>
February	...	<i>Arat.</i>

THE LAIKIPIAK.

The history of the Baringo tribes is so intimately connected with that of the Laikipiak Masai, that it is necessary to enter into some details of their occupation of Loroghi and Laikipia.

By Laikipiak tribes I mean a large group of Masai speaking clans, that formed the connecting links between the Samburu and what may be called the southern Masai, and that at no time penetrated beyond the country now bounded by the Uganda Railway.

They were divided into five main divisions as under :—

1. Il Tarasaeriaini.

This tribe occupied the country at the foot of Mount Kenya; the Euaso Ngiro, Ntarakwa and Subugu Olerigo.

2. Lornying; they occupied the Loroghi Plateau.

3. Ngang Elima; they occupied the high veldt above the plains of Mokotan.

4. Il Marma, who inhabited Lariak.

5. Il Mungmunyot; this last was a subdivision of the Tarasaeriaini and lived at the Lorian Swamp. They were annihilated by a Masai raiding party from Naivasha.

I cannot say exactly when these five divisions moved down from the north, but it was probably their invasion that forced the Doigio to abandon Loroghi and the Kwakituk the Angata e-in-barta.

The Laikipiak rose to supreme power about the time the Samburu were driven out of Baringo district, and became an absolute scourge to all the surrounding tribes. Eventually their power was broken by raids from other Masai tribes following on an outbreak of rinderpest amongst their cattle.

During the time they occupied Loroghi and the surrounding country, they rendered it impossible for either Suk or Turkana to graze their stock in safety anywhere south of the lower Tirkwel east of the Kerio, and thus it happened that neither Suk nor Turkana were able to reap the benefit of their victory over the Samburu for longer than a few years at most.

During their occupation of Loroghi various small colonies of poor natives established themselves at the foot of the escarpment in Baringo district. Most of these people have now joined the Njamus, and there is still a small settlement of them and of survivors of the Laikipiak on the Mokotan river near the present Government station. After their annihilation by the Naivasha Masai many Laikipiak joined the Njamus.

THE SUK.

The Suk,¹ or Bawgott, as they call themselves, may be divided into two sections, the agricultural and the pastoral, nomadic. Generally the former occupy the hilly country west of the Kerio; the latter the plains from the Kerio in the west to the Laikipiak Escarpment on the east; on the north they extend to the hills of Alongol, Masol and Laterok; on the south they reach close up to Njemps Nkuba. The pastoral Suk, numbering some 3,000 all told, are thus scattered over a very wide area.

The migration of pastoral Suk into Baringo district commenced some time about the first half of last century. The first to enter were the Kasauria, a branch of the Kapkoma. Koma lies across the Tirkwel and is a district in Kapukou. The Kasauria derive their name from a deep well or cistern in their country, from which they drew water. This cistern was so deep that the water was drawn up by stages in a bullock skin.

After leaving Koma the Kasauria first halted in Murkassikor, where they watered at the Kachepkai River. From here they moved on to Assassam and the River Suom²; and thence returned to Koma. These first early movements occupied perhaps ten to fifteen years.

A second exodus took the Kasauria as far as Barter, Kaibosso, Chepkerial and Tiati, all of which places lie on the Kerio. On this second occasion they were joined at different times by emigrants from Shok and other Hill Suk.

After much wandering up and down they moved back across the Tirkwel to a place called Sawgott. But before returning they first stopped at Kolowa near the right bank of the Kerio, and from here successfully launched a raiding party

¹ This is the name given them by the Masai and is perhaps derived from the name Shok.

² Suom is the Suk name for the River Tirkwel.

against a tribe known under various names as the Moiven, Muttia, Il-Mokwan, I-Sirikwa.

They were the people who built the stone kraals on the Uasin Gishu Plateau. On the present occasion they had moved down to Kaparamen on the Kerio to salt-lick their stock; having suffered severely at the hands of the Kasauria they fled back to their homes at Sirgoit on the plateau. This same tribe was at a later date driven from the Uasin Gishu Plateau by the Uasin Gishu Masai, and a great many of the survivors took refuge with the Suk, Kamasia and Njamus.

The Kasauria did not stop long at Sawgott, but moved on *via* the Rivers Bennegh and Kaibategh to Murkassikor, where they were badly raided first by Turkana and then by Koromoja and thus once more obliged to take refuge in Koma. This ends the second Suk exodus.

In Koma they remained unmolested for several years, and their numbers so increased that they were able to counter-raid the Karomoja and Turkana, and thus recovered much of the stock they had lost in their defeat at Murkassikor.

Shortly after the return of the Kasauria to Koma, another Suk clan, called the Kiplegit after their chief, left Kapukou and passing along the foot of the Suk hills, where they were joined by other Suk parties, proceeded to Tiati.

They were followed at a little later date by the Kasauria, who now made their third and last entrance into Baringo district, and established themselves on the Kerio River and east as far as Kito River.

While the Suk were pressing eastwards from across the Tirkwel River, the Samburu invasion of Baringo district was commencing, and after a few short years' residence, the Kiplegit were forced to abandon Tiati to the Kwakituk; the main body returned to Kapakou and the rest joined the Kasauria.

The Doigio now turned their attention to the Kasauria, and they, wearied by repeated raids, also finally abandoned the country and returned to their homes beyond the Tirkwel, leaving behind, however, the Hill Suk. Relief at last came, when the Serellai raided the Samburu, and the Suk and Turkana, seeing their chance, fell upon the remnants and drove them out.

This victory, however, availed them little, for now commenced a series of raids from Laikipia that ceased only on the extermination of the Laikipiak by the Naivasha Masai. Hereupon the Suk commenced pushing eastwards from the Kerio, and the Turkana once more moved southwards, and, but for the *par Britannia*, Baringo would once again have witnessed a life and death struggle between two tribes for the possession of the water-holes and grazing grounds of Ngingyang and Naudo.

The Suk are divided into the following geographical divisions:—

- | | |
|-------------|---------------------------------|
| 1. Kapukou. | 7. Muino. |
| 2. Shok. | 8. Ngorror. |
| 3. Kapkoma. | 9. Krut. |
| 4. Sekerr. | 10. Cheptulel. |
| 5. Magan. | 11. The pastoral nomadic Suk of |
| 6. Maerich. | Baringo district. |

These last, also the Suk of Kapukou, who are by far the richest and the most numerous of all the Suk tribes, are divided into:—Kasauria, Kacheripko, Cheptulel¹ and Kiplegit; a fifth division, which lived at Ngingyang and was exterminated by the Samburu, was the Kachenwono. The Kasauria are, so far as concerns Baringo district, much the most numerous.

I have shown how this division was originally a small band, that came from Koma in Shok: how they were joined by emigrants from other Suk clans, and how the majority finally, from fear of the Doigio, abandoned the Kerio and returned to their own country. Thus they formed the nucleus of a division that comprises members from every Suk clan and even from many foreign tribes, such as the Moiven, Samburu, etc., and the name has now therefore come to include all those who joined them in their long migration.

Like most east African races the Suk are a mixture of many different tribes. The oldest of the clans is most probably the Shok. They derive their name from the short sword they manufacture; their country lies two days' march up the Maerich Pass on the upper reaches of the River Krut, better known by its Swahili name Wehe; in addition to the Shok there is another small clan called the Kamiriongo, that came from Kapukou and was all but exterminated by Karamoja raids and the effects of rinderpest. The Shok are said to be the descendants of a tribe called the Tirruk, who came from the Angata e-'m-barta.

Other sections of the Suk came from Kawin on the upper Tirkwel and from the Chebleng Highlands; these latter were called the Tawl.

In addition many survivors of the Moiven, or Muttia, who succumbed to raids by the Vasin Gishu Masai and Karamoja, are to be found amongst the Suk. The dates when these tribes migrated from the north cannot be given with any degree of certainty, but the migration most probably took place within the last hundred and fifty years.

The various Suk divisions all speak slightly different dialects of the same language, a language closely akin to Nandi. The Sekerr, Kapukou and majority of the pastoral Suk speak one dialect, which is to be accounted for by the fact that most of the latter are descended from these two divisions.

The Hill Suk and pastoral Suk are often described as though they were two distinct tribes; there is, however, no essential difference between the two; the latter are merely the overflow population from the hills, from whence their numbers are still being augmented daily. It is true, of course, that the pastoral Suk have a much greater infusion of Samburu blood, owing to the circumstance that they have come into closer touch with that tribe; but otherwise the differences are merely such as we should expect to find in passing from an agricultural, hill-inhabiting, to a pastoral, plain-inhabiting, people. Thus we might anticipate that they would, on abandoning their hills and taking to a pastoral, nomadic life, discard the bow and arrow and take to the spear and shield. Further, when we find them using the same weapons and adorning their heads in the same peculiar fashion as the

¹ This section came from the Cheptulel Hill Suk.

that, the dead man's ornaments and headdress ; otherwise these are distributed amongst the deceased's relatives. In no case, however, are they given away, until at least a full month after the death, and lustrations of milk have cleansed from them the dead man's presence.

Circumcision, etc.—Circumcision of boys takes place in the month of July (Sukuku) ; girls are circumcised about three weeks later. Each section arranges the business for itself. Boys are isolated in the bush in huts away from the villages and are attended by a few old men, no women or young boys being allowed near them during this period, which lasts from two to three months. Girls are isolated in huts in the villages and are attended by old women only, no young girls or males being permitted near them.

Free love exists amongst the boys and girls, who meet by assignation in the bushes ; adultery is, however, a very serious offence, and the offender is liable to forfeit the whole of his property to the clan of the injured party. Usually, however, he is allowed to compound by slaughtering one or two bullocks and inviting the husband and his friends to a feast. Sometimes, and this is often the case, when there is no direct evidence against the offender, but only strong suspicion on the part of the husband, the matter is settled by him and the suspected party fighting a duel with sticks.

After a woman is delivered of a child, her husband may not enter her hut for at least two months, and cohabitation is not resumed until the child is weaned, and the mother has performed the necessary purification ceremonies.¹

At birth the umbilical cord is cut off high up and allowed to remain, until it drops off, when it is put in a bag and placed in the hut.

Twins are not considered lucky, and when the birth of such occurs, it is necessary to invite all the people to a feast, at which much dancing takes place, and at the conclusion of which the fates are finally propitiated by the company offering up a prayer for mother and children. Should this be omitted, the twins will die and the mother go into a decline. A cow giving birth to twins is immediately slaughtered together with its offending progeny.

A wife at her marriage receives a certain amount of property from her husband, should he be in a position to give her any ; this property is at his death divided equally amongst his male children. The common property of the father is divided amongst his male children, the eldest receiving the largest share, the others according to their respective ages.

Widows pass into the possession of deceased's brothers and, failing such, of his clan. The purchase price of a sister, when the father is dead, is divided amongst her brothers, full brothers receiving a larger share than half-brothers.

Religion.—God is called Ellap (or possibly Ellat, meaning rain). He is on the whole a benevolent god and sends the rain.

There is also a god of the nether-world, as in the distance smoke is often seen rising out of the ground, and also sheep and goats and people, that on approaching

¹ No such prohibition exists in the case of the Turkana.

disappear. The effects of mirage have no doubt given rise to this belief. The home of this god of the nether-world is at Mount Alongol, where steam rises out of the ground and occasionally strange noises are heard.

There is also a third god called Kerial; he is the god of thunder.

The Suk indulge frequently in prayer meetings: thus, when the white man visits them to collect the hut tax, they will, after the customary *ngoma*, or dance, pray most heartily that God will soften his heart and cause him to deal gently with them. They will also hold prayer meetings for the sick, on whose behalf a bullock or a few sheep and goats are killed, and pray thus:—"If this sickness be of the rain or of the grass or of the earth, or if it be from yourself, take it away." An old man standing up in the centre, the rest squatting round him in a ring, will pronounce the prayer, whilst they join in at intervals in a kind of deep chorus.

Dances.—Suk dances, of which there are a great variety, are usually in mimicry of some animal or the hunting of some animal. One very remarkable dance imitates the water spirit seizing a drowning man.

General.—The Suk are a tall, well built race, very slender and lithe, and remarkable for their powers of running and jumping.

They are exceptionally truthful and honest; yet of an exceedingly excitable temperament and inclined to treachery in dealing with their enemies. Thus Lowalan, a great Suk warrior, has on more than one occasion invited his enemies to a conference and then treacherously massacred them.

The pastoral Suk have a peculiär way of cutting up a slaughtered beast; in this particular they have, I think, copied the Turkana.

MARAGWETTA, NDO AND HILL SUK.

All these tribes occupy the range of hills that form the continuation of the western wall of the Elgeyo Valley. Beyond them in a westerly direction the country is a confused jumble of hills peopled by tribes whose names in many cases we do not know.

The Maragwetta are the northernmost of the Chebleng tribes¹; north of them are the Ndo and beyond these again the Hill Suk.

The Maragwetta and Ndo are divided into clans, each clan corresponding to a geographical section as under:—

Maragwetta.

<i>Section.</i>		<i>Clan.</i>			<i>Totem.</i>
1. Beya	...	Tallai	...	...	Kogai (the crow).
2. Kaksegai	...	Oreon	...	...	—
3. Katut	...	Sirichon	...	...	Seran (the <i>dikdik</i> ; a small antelope).
4. Kabioso	...	Kamugo	...	...	Kogai (the crow).
5. Bogorror	...	Tallai	...	...	Kogai (the crow).

¹ Chebleng is the name given to a number of tribes occupying the western wall of the Elgeyo Valley; their country is about fifty miles in extent.

South of these five sections are seven more, which I have not visited.

- | | | | | | |
|--------------|-----|------------------|-----|-----|----------------------|
| 1. Sibo | ... | Saban | ... | ... | The elephant. |
| 2. Kapsagat | ... | Tallai or Tulin | ... | ... | The crow and jackal. |
| 3. Kapsegom | ... | Kapsegom | ... | ... | Sirere (the kite). |
| 4. Kapsekerr | ... | Tallai | ... | ... | Kogai (the crow). |
| 5. Kamarein | ... | Tallai | ... | ... | Kogai (the crow). |
| 6. Kauwau | ... | Kapsegom | ... | ... | Sirere (the kite). |
| 7. Mareich | ... | Tallai and Legen | ... | ... | Crow and frog. |
| 8. Kabell | ... | Chepbogamwoi | ... | ... | The buffalo. |

The Kamugo, Tallai and Chepbogamwoi are said to have come from Chemmorgoi which lies somewhere in the highlands behind Chebleng; the Saban from Krut; the Kapsegom from the Angata e-'m-barta *via* Kito.

The hills behind Kapsagat are inhabited by the Sangwirr, who appear to be a mixture of Nandi and Masai; probably they are a tribe of poor natives akin to the Kony or Elgonyi of Mt. Elgon.

The country of the Hill Suk, whose clans do not occupy separate geographical sections, is divided from south to north as under:—

- | | |
|--------------|----------------|
| 1. Laepai. | 7. Ngorror. |
| 2. Chepkoa. | 8. Songutua. |
| 3. Kivas. | 9. Maerich. |
| 4. Seya. | 10. Chepbinyi. |
| 5. Soito. | 11. Sekerr. |
| 6. Kaptakau. | |

Sections one to five are called the Cheptulel; six and seven the Krut; eight, nine and ten the Maerich.

The continuation of the Ngorror range, where the contour of the hills describes almost a right angle, is occupied by the Muino.

The country behind Maerich is peopled by a Suk clan called Beyus; their country is called Kibeyus.

The Maragwetta are very nearly related to the Elgeyo, who are allied to the Nandi; the Ndo appear to be a mixture of Maragwetta and Suk with perhaps a slight infusion of Masai or Samburu blood. They are all but bilingual, conversing in Suk and Ndo with almost equal fluency.

In passing from the Hill Suk to the Maragwetta and Ndo, one is at once struck by the much higher state of civilisation evinced by the two latter tribes. Whilst the huts of the former are hardly superior to those of the pastoral Suk, those of the latter are exceedingly well built and of a most excellent design.

Again the Suk live mostly in isolated kraals, that rarely comprise more than one dwelling hut, whereas the Maragwetta and Ndo live in villages, the huts erected on neatly levelled off platforms. Seen in the distance these villages appear to be built in terraces rising one above the other on the hillside, and the impression they give is one of cleanliness and order.

All the hill people build their huts high up on the hillside. This they do chiefly on account of the swarms of mosquitoes, that infest the low country during the rains. The cattle and most of the sheep and goats are placed at night in kraals down below.

Hill Suk, Maragwetta and Ndo all use both the bow and arrow and the Suk throwing spear; whilst, however, the former weapon predominates amongst the Maragwetta and Ndo, the contrary is the case amongst the Hill Suk; though I think there can be little doubt, but that the natural weapon of all the hill tribes is the bow, and that the spear has been introduced amongst them by contact with the people of the plains. The Chebleng shield is different from that of the Suk, resembling that of the Masai. They also carry a primitive knife of somewhat the same description as the Masai sword. The Suk rarely carry a knife; the spear supplying the place of a cutting instrument; though the Shok are an exception to this rule.

Whilst the Suk hover constantly on the verge of starvation and possess but little stock, the Maragwetta and Ndo are, for an agricultural people, comparatively rich; their country is fertile and well watered, and famines are hardly known amongst them. They are thus able every year to sell considerable quantities of grain and tobacco to other tribes.

The stock owned by the hill tribes being limited, it follows that the price of a wife—a sure indication of the wealth of a people—is as a rule extremely low, ranging from a pot of honey to a few sheep and goats. Very few possess more than one wife; the great majority are monogamous; chiefly because they cannot afford to maintain large families. Thus it happens that many of their women look for husbands elsewhere, amongst the rich pastoral Suk and especially amongst the Suk of Kapukou.

All the hill tribes of these regions cultivate two crops only, eleusine and millet. Eleusine is almost invariably sown on the hillside, millet in the low country. Sweet potatoes, bananas, arrowroot, etc., are unknown, and many of the more northerly sections, whose plantations are less fertile than those of their neighbours in the south, are thus extremely liable to famines, having, when their crops fail, little else to fall back upon; this is especially the case with those sections that inhabit the highlands and are unable to grow any other crop than eleusine. A variety of insect pests exists, which destroy a large percentage of the crops every season and not unfrequently cause a serious famine. In addition great flocks of birds feed upon the crops, and at times elephants threaten destruction to whole acres of ripening grain. The life of many of the hill communities is thus a hard one and existence most precarious. For this reason numbers migrate every year to Kapukou and to the other pastoral Suk, whose population is constantly on the increase at the expense of the hill tribes. So poor are many of the people, that they not unfrequently during several months in the year subsist almost entirely on roots, berries, rats, mice, and other lesser mammals, and an occasional elephant.¹

¹ These remarks apply more particularly to the hill tribe.

All these tribes are experts at irrigation, of which they make use to a most astonishing extent. For instance, the whole of Ndo, which is ten or twelve miles in length, is, with the exception of the last two miles at the north end, watered by ditches taken from a single river. This will appear the more remarkable, when we consider the limited size of the population. The irrigation work is mostly done by the men.

The soil is turned up by means of digging sticks; the hoeing is done with a minute spade, about half the size of an ordinary trowel, fitted into a stick like an adze.

The hill tribes all keep bees; some of the honey is sold to the pastoral tribes, but most of it is utilised for brewing beer, of which the elders consume great quantities.

The Hill Suk are great hunters, many of them being to a considerable extent dependent on the elephants for their meat supply. The country at the foot of their hills is a vast expanse of dense scrub, the home of numerous elephants. For hunting purposes this is divided into preserves, each section owning its piece of bush, in which it has the exclusive right to kill game. Should a native of one section wound a beast, and it die or be despatched in the domain of another, the ivory becomes the property of the man who first wounded it and the meat the property of the section in whose preserve it died. This is the tribal law regarding the slaying of elephants, and as may be imagined it gives rise to many disputes.

The sections that kill most game and are also the poorest are the Kaptakau, Ngrrorr, Maerich and Sekerr. The first of these use mostly poisoned arrows, the other three the ordinary Suk throwing spear; whilst, however, the Maerich and Sekerr hunt on foot, the Ngrrorr build platforms in the trees, from which lying in wait for the elephants, they stab them, as they go down to water.

The Maragwetta and Ndo resemble the Suk in most of their laws and customs. Circumcision takes place annually in the month of Kwarra (December) amongst the Ndo in the month of August. Their population being less scattered, residents in the hills for obvious reasons bury all their dead. Should a person die in the low country, the procedure is the same as that amongst the Suk: whereas, however, a corpse buried in the hills is placed in a deep hole and covered over with stones, one buried in the low country is deposited in a shallow trench and merely covered over with grass and leaves.

Amongst all the hill tribes occasional mounds of stones will be noticed; these are sometimes graves, but also very often monuments put up in memory of some one who met with a violent end, such as death by lightning or at the hands of an enemy. Sometimes, too, these mounds indicate the spot where a meteor fell, or the lightning struck the ground.

The Ndo women dress like the young unmarried Masai girls, except that the skin robe is not fastened round the waist, but allowed to hang loosely from the shoulders. The Maragwetta women dress like the Suk.

Property.—Plantations in the low country are the owner's property to be

bought and sold, the price being usually a female goat for about half an acre. Clearing ground in the high veldt does not create ownership. On his death a man's sons divide the ground equally between them.

KAMASIA.

This tribe occupies the Kamasia range of hills; they are a most numerous and powerful people, exceeding in numbers probably all the other hill tribes whom they resemble very closely. The account I have given of these others applies therefore equally to this tribe.

They are divided into a great number of different sections and also into clans. Unfortunately, I am unable to give a full list of all their clans; the following are, however, those of the Kapteberewa and Nderois sections.

Kapteberewa sections:—

<i>Clan.</i>	<i>Totem.</i>	<i>Clan.</i>	<i>Totem.</i>
1. Kapkeruwa ...	The sun (<i>Sot</i>)	9. Kapartaber ...	The sun (<i>Sot</i>).
2. Kaptogongo ...	" "	10. Kapkolumon ...	" "
3. Kamengo ...	" "	11. Tallai ...	The leopard.
4. Kapchessoito...	" "	12. Kawbil ...	The porcupine (<i>sabet</i>).
5. Kapalangwa ...	" "	13. Tungaw ...	The hyena (<i>chesin</i>).
6. Kameiwan ...	" "	14. Kirimos ...	" "
7. Kaperchino ...	" "		
8. Kapsonok ...	" "		

The Kapkeruwa are said to have come from the Sogota River; numbers 2 to 10 from the east; that is to say, they probably came from the Angata e-'m-barta; the Tallai are of Chebleng origin; the Kawbil and Kirimos came from Moiven; the Tungaw from Elgeyo and Sangwir. I think there is some ground for believing that the Sot clans, before finally settling in Kamasia, inhabited the plains of Mokotan and the high veldt above.

I understood from the Kamasia, that members of the Sot clans may intermarry, even within the same clan; and that the only two exogamous clans are the Kawbil and Tungaw.

Nderois sections:—

<i>Clan.</i>	<i>Totem.</i>	<i>Clan.</i>	<i>Totem.</i>
1. Kimoi ...	The buffalo.	4. Sot ...	The sun.
2. Mogeï ...	The bee.	5. Kimwan ...	The guinea fowl.
3. Tallai ...	The frog.	6. Terriki ...	The elephant.

Like the other Sot clans this one is also said to have come from the east. The Kimwan are of Samburu origin, which probably accounts for the resemblance many Nderois bear to the Njamus. The Terriki originally occupied Sessivi, the highlands above the east of Lake Hannington, called by them Ararat; at one time they went to Njemps, but returned again and finally joined the Nderois. They were possibly a branch of the Samburu.

The Kamasia women dress like the Nandi; some of them, chiefly the Kapteberewa, are now beginning to adopt the Suk style of dress.

TURKANA.

The Turkana are divided into a number of different tribes, each with its own chief; there is no paramount chief of the whole tribe, nor do they appear to have any medicine man.

The following are the principal tribes :—

- | | |
|----------------|-------------------|
| 1. Ngolio. | 9. Lugumong. |
| 2. Ngoitunya. | 10. Oiuaeguara. |
| 3. Nittacha. | 11. Nijiye. |
| 4. Nesselou. | 12. Ngirriomong. |
| 5. Nbochoross. | 13. Ngakumuk. |
| 6. Ngissir. | 14. Ngalabong. |
| 7. Nissikir. | 15. Ngorr. |
| 8. Kamatak. | 16. Nikotomungwa. |

Perhaps no people in East Africa present so many different types as do the Turkana. Two relatively extreme types are to be met; the one, dolichocephalic, orthognathous, slender and of medium height, with small hands and feet; the other brachycephalic, prognathous, of great stature, big-limbed, and with large hands and feet. The former represents the pure Samburu and Rendile type, with whom the Turkana are largely intermarried; the latter, what I take to be the pure Turkana type, which is like that of no single tribe I have yet met in East Africa. I have often remarked the striking resemblance many of the children bear to the Kavirondo, though this resemblance is rarely observed in the full-grown individual.

The Suk and Turkana are frequently classed as closely allied tribes; but beyond a certain resemblance due to the circumstance that both have a large infusion of Samburu blood, I have so far failed to discover any real similarity, such as we should expect, were they both descended from a common ancestor. Whilst it is true, that in outward appearance they somewhat resemble each other, as for instance in their head-dresses, I do not think there can be the smallest doubt but that the Suk have in this respect copied the Turkana; and although both are tall, the similarity ceases here, for whilst the Suk are very slender, the Turkana are big limbed and heavily built; in fact the whole shape of the head and body is entirely different.

Whilst it is difficult to discover any special points of resemblance between the two tribes, there is no difficulty in finding points in which they differ. Thus the Suk practise circumcision in both sexes; the Turkana do not circumcise at all. The Suk speak a dialect of the Nandi language, a peculiarly soft language; the Turkana language, which is very like Masai, is deep and hoarse and rich in gutturals. Again whilst the Suk are not above eating certain kinds of game meat, the Turkana

are absolutely omnivorous; with the exception of hyenas, snakes and perhaps one or two other animals, they will devour every single species of living animal they can obtain; they will even consume carrion. When we consider the enormous quantities of stock they own, this peculiarity of theirs appears very remarkable.

The Turkana are divided into clans (*attegir*), but despite much questioning I quite failed to discover the existence of any form of totemism.

The following are some of the most important Ngoitunya and Ngolio clans:—

Nitegorr.	Kaleso.	Egurerr.	Abuchaw.
Molereto.	Ngonom.	Ngaruwo.	Ngattigo.
Tuduya.	Ngatap.	Neturana.	Ekkadenya.
Ellelet.	Moana.	Erarak.	Ogorok.
Ebalang.	Nittacha.	Eraraket.	

The Ngaruwo is the rain-makers' clan. The clans are exogamous.

The life of the individual is divided into stages. The first, that of a young boy, is called *nidue*; the second, that of the warrior, *egile*; the third, that of the old man, *kasikou*. The corresponding stages in the life of women are *apesur*, *aberu*, and *agemat*.

The generations of warriors are called *asavanissia*. Each generation, as it attains the warrior's age, is given a distinctive name. Judging from my list of *asavanissia* a new age is created every four or five years.

When a Turkana becomes an old man, he is termed *oppa* and is entitled to wear a peculiar kind of head-dress made of beads; on this point, however, I can furnish no reliable information.

The most striking feature of the Turkana is the youthfulness of their old men. At an age when the men of other tribes are past working and fighting and spend their days in drinking, the Turkana still retain their youth and vigour; and, instead of the young men, they themselves are said to form the first line of defence in case of an attack upon the village. This, I think, may, in part at least, be ascribed to their total abstinence from all fermented liquor, which is quite unknown amongst them, and also perhaps to their varied diet; for in addition to all kinds of meat they consume great quantities of vegetable food and a variety of wild berries, to say nothing of unlimited supplies of camels' milk.

Two kinds of wild berries are a favourite article of consumption, one, resembling somewhat the wild coffee, stains their teeth a dirty yellow; hence the Turkana always give the impression of possessing very bad teeth; the other is the bitter, peppery tasting fruit of the Nessegonn bush, which is widely distributed throughout these regions, and the leathery leaves of which furnish, in the arid wastes of drifting sand on the lower Sogota, camels, donkeys and goats with an excellent substitute for grass, which, of course, does not grow here.

Free love is permitted amongst the sexes, even old men having their sweet-hearts, whom they meet by night in the bushes. Parents do not object to their daughters having a lover, provided he be sufficiently wealthy to pay compensation in the event of the girl becoming pregnant. Should this occur, she is questioned

regarding her lovers, and should she refuse to name them, she is beaten until she complies. Each one of them, no matter how many there may have been, is then required to pay thirty head of cattle to the father of the girl, who also takes possession of the child.

The marriage price is very high and consists nominally of twenty head of cattle and thirty donkeys to the mother of the bride; this is due before the marriage takes place; next thirty head of cattle and a large number of camels, donkeys, sheep and goats to the father, five head of cattle to each of his remaining wives, and finally two head to each of the bride's brothers and sisters. Should the bridegroom not be in a position to pay the full amount, he may, provided of course the parents agree, pay instalments, in which case he moves to his father-in-law's village, and his wife, and any children she may have, then live at the expense of her parents, until the final payment is completed.

After her marriage a woman may not enter her father's kraal, until he has slaughtered a couple of bullocks and made a great feast, to which the whole neighbourhood is invited. It is astonishing to see the quantity and variety of eatables placed before the guests on these occasions, and the preparations that are made for days beforehand. Not less remarkable is the entire absence of all fermented liquors.

The orgies do not take place in the village, but in an enclosure put up specially for the occasion, so as to allow of the daughter being present. The guests arrive in a body, singing and dancing, and storm the place in imitation of an attack on an enemy's kraal. The following day the daughter enters her father's village, and henceforth she is free to come and go as she pleases.

The price of a wife being so high, it follows that adultery is a most serious crime, and, if caught, the offender is condemned to death by the community and executed. If however he abscond, the whole of his property, or, if he be a poor man, his wives, or, if they be too old, his marriageable daughters, pass into the possession of the injured party. After the lapse of a few years the fugitive may return, but to the end of his days, whatever property he may become possessed of is claimed by the family of the man whose wife he seduced.

As regards the woman, if she be old, no action is taken against her; if she be as yet childless, she is sent back to her father, and the marriage price is returned; but if she has already borne children, her husband divorces her, allowing her however, for the sake of her offspring, to remain in the village. As may be imagined cases of adultery are not of very frequent occurrence.

Twins are unlucky, and as often as not one of them is allowed to die; the other or both, as the case may be, has a string of cowrie shells or some similar charm fastened round its neck, which it wears to the day of its death, and thus the evil effects of its unlucky birth are warded off.

The Turkana have a peculiar way of slaughtering and cutting up a beast; this is done in the following manner:—The animal is speared through the lungs and then allowed to die; a second thrust is not usually dealt. When dead, a circular

cut is first made round the buttocks and the flesh cut out; next a cut along the flanks on either side as far as the shoulder and thence downwards; the rest of the beast is then divided up, and the meat is roasted in the skin and eaten thus, skin and all. A Turkana making a present of an ox, himself does the killing, and is given in return the fleshy part of the buttocks, cut out in the manner I have described.

Burials.—All married males and very old women are buried; barren and unmarried women are thrown out into the bushes and covered over with grass. Young and middle-aged married women are left in the hut, which is broken down over the corpse, and the village then moves to another site. Old people are usually buried in the kraal, and the grave is covered over with thorns and fenced off.

The body is deposited in a shallow trench together with blood, meat, milk, water, tobacco, grain, etc. At the funeral a sheep, goat, or other domestic animal, according to the dead person's importance in life, is killed and eaten by those present sitting in a circle round the grave, and the bones and undigested food from the stomach are placed upon the mound. Whilst the village remains there, food is always offered to the dead man, and whenever they feast fat is poured upon the grave.

If the deceased was a very important person, he is anointed with fat before burial, and, instead of thorns, stones are placed upon the grave, to which his relatives return every year and sacrifice a bullock. Unless, however, he was a person of distinction, he is soon forgotten.

A deceased's ornaments are kept for many years and are eventually given away. It is unlucky to walk over a grave.

Religion.—They have two gods, one of whom, called Agipie, lives in the sky and is a benevolent god; the other has his dwelling in rocks, mountains, rivers and below in the nether-world, where he has cattle, sheep and goats and people who are sometimes heard talking. Once a man visited this nether-world and saw stock and people and even his own children. This god is a bad god and is the cause of drowning and of the lightning striking people and cattle. When there is a thunderstorm, it is the two gods fighting, and sometimes one and sometimes the other hurls the lightning.

History.—The history of the Turkana of Baringo district is similar to that of the Suk. Driven by the Samburu from Ngingyang, Naudo and the Sogota they later reoccupied these regions on the annihilation of that tribe, only to retire again before the incessant onslaughts of the Laikipiak Masai. During the last few years they have once more moved south, and are now slowly driving the Suk before them, and, but for their fear of the white man, they would long since have decided the possession of these grazing grounds by an appeal to arms.

Being largely intermarried with the Samburu, it follows that many Turkana speak Masai; otherwise they are exceptionally stupid at learning foreign languages, and I do not know of a single instance of one of them speaking either Suk¹ or Swahili.

Unlike the Suk they are most untruthful and dishonest, and when travelling in their country a sharp watch has to be kept on them, or they will steal every article they can lay their hands on.

They are always spoken of as the "gigantic" Turkana; but, though undoubtedly a tall race, I think their height has been greatly exaggerated. The tallest man I met measured 6 feet 6 inches, and I was informed that there was only one man taller than him in the tribe. Judging from those I measured, I should say the men do not average more than, at the most, 5 feet 11 inches in height.

The custom of shaking hands is unknown amongst the Turkana.

Calendar.—The following is the Turkana calendar :—

<i>Wet season.</i>	<i>Nakiborrer.</i>	<i>Dry season.</i>	<i>Nakamou.</i>
1. March ...	<i>Lomaruk.</i>	7. September ...	<i>Lolongo.</i>
2. April ...	<i>Tetimarur.</i>	8. October ...	<i>Lopo.</i>
3. May ...	<i>Eliel.</i>	9. November ...	<i>Lorara.</i>
4. June ...	<i>Loichoto.</i>	10. December ...	<i>Lomuk.</i>
5. July ...	<i>Loisoban.</i>	11. January ...	<i>Logwang.</i>
6. August ...	<i>Loitiak.</i>	12. February ...	<i>Lodunge.</i>

The months of *Loitiak*, *Lolongo* and *Lopo* are known as *Nait*, because the grass turns yellow.

CONCLUSION.

The main conclusions attained are that waves of migration into Baringo district commenced about one or two hundred years ago, and that these coincided very closely with, and were probably caused by, a general movement from the north in two directions; namely, towards Samburu in the east and Mount Elgon in the west. Something of this sort must have occurred, otherwise how are we to account for the fact of the Suk and Samburu trekking from comparatively fertile and well watered regions to the barren waterless plains of the Sogota and Kerio.

This general movement resulted in two separate migrations; one of the Masai-speaking tribes from the north; and one of Nandi-speaking tribes from the foot of Mount Elgon in the west. Further I think there is good reason for believing that the Nandi-speaking tribes came from the north at a much earlier date than these others.

These migrations spread over a great number of years and have not ceased even yet, though they are of course held very much in check since the advent of the British Government. Often the invading tribes from the west, their numbers wasted by constant warfare in the struggle for existence, were forced backwards by superior forces from the north, but the general trend was eastwards and southwards.

The invading tribes followed two main routes. Eastwards from the slopes of Elgon across the Tirkwel near its junction with the Krut at Ngabotok or through the Maerich Pass; southwards across the Angata e-'m-barta on to the Sogota or over Loroghi to Naudo, the plains of Mokotan and Lake Baringo. To this day traces are to be seen of a great cattle track running from Lorogho to Naudo, now completely lost in dense jungle.

The Angata e-'m-barta played no doubt an important part in these migrations; for, possessing, as it does, an ample supply of good water and magnificent grazing, it naturally became a resting place, where tribes, exhausted by their long journey across the huge waterless wastes in the north, gladly halted and gathered fresh strength, until a new invading body, impelled by dire necessity, wrested the country from them.

In my account of the different tribes I have spoken a great deal of the Samburu and Laikipiak raids, because these played a most important part in the history of Baringo district; for all that the fact must not be overlooked, that both Suk and Turkana on more than one occasion very successfully retaliated on their enemies.

To sum up, no single tribe in these regions is of pure descent, but all are a mixture of a great number of different clans and races. On the one hand we have the Njamus and Turkana, on the other the Nandi-speaking tribes of Kamasia, Suk, Chebleng and Ndo. The pastoral Suk have a large infusion of Samburu blood, and but for this fact I think they would without hesitation be classed as a branch of the Nandi. I have shown how one of the oldest of the Suk tribes is the Shok; how these, owing to various causes, spread to Kapukou and thence to Baringo district and were there joined by the Hill Suk. From all accounts the Shok differs from the Suk of the present day quite as much as do the Kamasia from the Nandi, and further, they appear to be quite as closely allied to the Nandi as this other tribe.

I conclude, therefore, that they are all descended from a common ancestral tribe, and that after their migration from the north they were separated for a sufficiently lengthy period to develop on individual lines.

Appended is a table showing the calendars of the various hill tribes. All the calendars are those of an agricultural people and almost identical.

TABLE SHOWING CALENDAR OF VARIOUS HILL TRIBES IN BARINGO DISTRICT.

Month.	Suk.	Ndo.	Maragvetta.	Kabkamai. ⁸	Kamasia.	
					Kapteberewa.	Nderoi. ⁹
Wet season.	Kamei.	Kamei.	Kipuguen.	Kipuguen.	Terrelaw.	Terrelaw.
September ...	¹ <i>Tabatch</i> ...	<i>Tabatch</i> ...	<i>Tabatch</i> ...	<i>Tabatch</i> ...	<i>Tabatch</i> ...	<i>Moguld</i> ...
October ...	² <i>Kapsatt</i> ...	<i>Kapsatt</i> ...	<i>Rawptoi</i> ...	<i>Kapsatt</i> ...	<i>Kubsett</i> ...	<i>Ngoitoto</i> ...
November ...	³ <i>Kawgelyon</i> ...	<i>Kawgelyon</i> ...	<i>Kawgelyon</i> ...	<i>Kaplam</i> ...	<i>Kaplam</i> ...	<i>Kaptama</i> ...
December ...	⁴ <i>Kawgei</i> ...	<i>Kwarra</i> ...	<i>Kwarra</i> ...	<i>Kipsiruwa</i> ...	<i>Uwaut</i> ...	<i>Uwaut</i> ...
January ...	⁵ <i>Mou</i> ...	<i>Mou</i> ...	<i>Mou</i> ...	<i>Lenamut</i> ...	<i>Mamut</i> ...	<i>Mamut</i> ...
February ...	⁶ <i>Tertter</i> ...	<i>Tertter</i> ...	<i>Tertter</i> ...	<i>Tertter</i> ...	<i>Keblaw</i> ...	<i>Keblaw</i> ...
<i>The months of empty bellies.</i>						
¹ When the waddy thorn trees are in bloom.						
² Windy months.						
³ Starry nights.						
⁴ When the sheep and goats are calling to each other.						
⁵ When the whole earth dries up, and there is no food.						
⁶ When small showers come and lick up the dust.						
Dry season.	<i>Bengat.</i>	<i>Sengartat.</i>	<i>Uwawgot.</i>	<i>Uwaut.</i>	<i>Uwaut.</i>	<i>Uwaut.</i>
<i>The months of full bellies.</i>						
March ...	¹ <i>Bogogma</i> ...	<i>Bogogwa</i> ...	<i>Mellaraarp</i> ...	<i>Goborgowitch</i> ...	<i>Keptasapp</i> ...	<i>Keptasapp</i> ...
April ...	² <i>Regesa</i> ...	<i>Regesa</i> ...	<i>Burett</i> ...	<i>Burett</i> ...	<i>Sessit</i> ...	<i>Sessit</i> ...
May ...	³ <i>Perrowa</i> ...	<i>Perrowa</i> ...	<i>Perrowa</i> ...	<i>Perrowa</i> ...	<i>Sokol</i> ...	<i>Kiptogawet</i> ...
June ...	⁴ <i>Meluwon</i> ¹⁰ ...	<i>Meldai</i> ...	<i>Meldai</i> ...	<i>Meldai</i> ...	<i>Mel</i> ⁷ ...	" ...
July ...	⁵ <i>Sukukui</i> ⁷ ...	<i>Meletu</i> ...	<i>Melarak</i> ...	<i>Meletu</i> ...	<i>Meldanga</i> ...	<i>Kipsunde</i> ...
August ...	⁶ <i>Mugeyon</i> ...	<i>Mugeyon</i> ⁷ ...	<i>Mugeyon</i> ...	<i>Mugeyon</i> ...	<i>Mugeyon</i> ...	<i>Majol</i> ...
¹ The month of flying ants.						
² When much rain prevents people going abroad.						
³ When people can once more get about.						
⁴ When small supplies of early food are got from the shambas.						
⁵ The months of mists.						
⁶ When the grass commences drying up.						

¹ Men and women at work in the shambas.³ Weeding, women only work.⁵ Grain is ripening; women and children busy scaring birds.⁷ Circumcision month for boys.⁸ This calendar was also given me as the Olmo calendar; Kapkamai is a small tribe on the south side of Chebleng.⁹ This calendar is probably not strictly accurate.² The seed is sown, women only work.⁴ Men are busy irrigating, not much other work.⁶ Harvest; August is the month when there is most honey.¹⁰ Also known as Meldag.



FIG. 2.—SUK ; MONKEY DANCE.



FIG. 4.—SUK ; MONKEY DANCE.



FIG. 1.—SUK DANCING.



FIG. 3.—SUK ; MONKEY DANCE.

TRIBES INHABITING THE BARINGO DISTRICT, BRITISH EAST AFRICA.



FIG. 1.—SUK CHIEF.
AN ELDER.



FIG. 2.—SUK CHIEF.
AN ELDER.



FIG. 3.—HILL SUK.



FIG. 4.—HILL SUK.



FIG. 5.—TURKANA.



FIG. 6.—SUK ; YOUNG WARRIORS.



FIG. 7.—TURKANA.
OPPLA ELDER.



FIG. 2.—TURKANA.

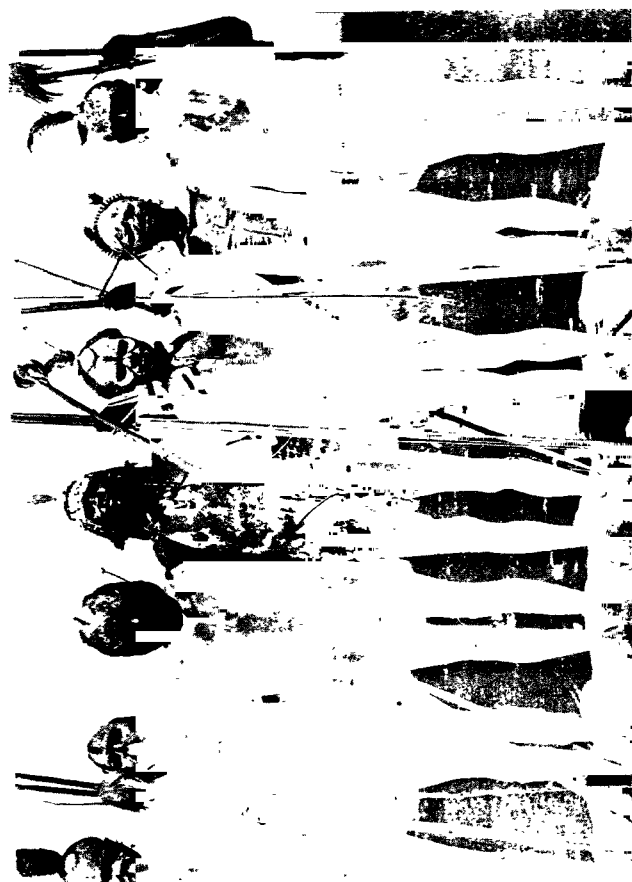


FIG. 4.—SUK WARRIORS.



FIG. 1.—TURKANA.



FIG. 3.—MARAGWETTA CHIEFS.

TRIBES INHABITING THE BARINGO DISTRICT, BRITISH EAST AFRICA.

A LIST OF THE TRIBES OF THE VALLEY OF THE AMAZONS,
INCLUDING THOSE ON THE BANKS OF THE MAIN STREAM
AND OF ALL THE TRIBUTARIES.

ATTEMPTED BY SIR CLEMENTS MARKHAM, K.C.B.

Third Edition 1910.

THE numerous tribes scattered over the great Amazonian basin are probably the disintegrated remains of one, or at most two ancient nations, if we exclude all foreign elements, such as admixtures and intrusions of Carib tribes on the north, Andean on the west, and Pampa or Patagonian on the south. Yet so great is the number of names by which these multitudinous tribes are known, that the mention of some of them is likely to convey only a confused idea to the mind of the ethnologist, while the very names of many will be quite unknown to him. At the same time the study of a people in a state of nature, occupying so large an area of the habitable portion of the earth, is certainly of no small importance to the furtherance of his science.

Forty-six years ago it occurred to me that a tolerably complete list of all the tribes in the basin of the River Amazons, including all its tributaries, arranged in alphabetical order and supplying, so far as was possible, the information as to the locality where each is found, and a few other particulars, together with the names of authors by whom each is mentioned, and the dates at which they wrote, would afford such efficient means of easy reference, as would obviate much of the difficulty by which the study of these interesting tribes is surrounded. The preliminary list was published in 1864.¹ But since then a considerable number of tribes were reported by travellers, the names of which were not included in the list of 1864, especially in the parts of the Amazonian valley which were not then discovered. Much information was also collected respecting tribes already known. A second edition of the list of 1864 was, therefore, prepared, and printed in 1895.² After another fifteen years many more tribes have been reported, and additional information has been received from various recent publications. A revised third

¹ Published by the Anthropological Institute, xvi; "A List of the Tribes in the Valley of the Amazon, including those on the banks of the Main Stream, and of all its Tributaries," by Clements R. Markham. (Read January 12th, 1864.)

² "A List of the Tribes in the Valley of the Amazon, including those on the banks of the Main Stream, and of all its Tributaries," attempted by Clements R. Markham (second edition), 1895.

edition has, therefore, become desirable. The list is prefaced by a few general remarks on the characteristics of the Amazonian tribes, and by a list of authorities. The number of names of tribes is 1,087, but of these about 273 are either synonyms or names of branches of larger tribes. About thirty are recorded to be extinct, but probably the names of many others have disappeared, besides those only recorded by Acuña in 1640, and not mentioned afterwards. These deductions leave 650. Prince gives 134 names of tribes (without recording localities or authorities) which are, however, included in the list.

In appearance the Indians of the Amazons, and most of the particular tribes, differ but slightly from each other, and their physical characteristics are thus summed up by Mr. Wallace (p. 478).

Their skin is of a coppery or brown colour of various shades, often nearly the tint of smooth Honduras mahogany, jet black straight hair and never curled,¹ black eyes, and very little or no beard. With regard to their features it is impossible to give any general characteristics. In some the whole face is wide and rather flattened, but I never could discover an unusual obliquity in the eyes or projection of the cheek bones. In many, of both sexes, the most perfect regularity of feature exists, and there are numbers who, in colour alone, differ from a good-looking European. Their figures are generally superb, and I have never felt so much pleasure in gazing at the finest statue as at these living illustrations of the beauty of the human form. The development of the chest is such as, I believe, never exists in the best-formed European, exhibiting a splendid series of convex undulations without a hollow in any part of it.

Nearly all travellers from the days of Acuña to those of Wallace and Bates have spoken in high terms of these noble savages of the Amazon valley. The *Omaguas*, whose name was coupled with *El Dorado* from the earliest times, receive praise, both as regards their physical and mental qualities, from Acuña, Velasco, Condamine, Smyth, Maw, Martius, in short from every traveller who has come in contact with them. The same may be said of several other tribes; while their capacity for civilisation, up to a certain point, when placed under favourable circumstances, is proved by the present satisfactory state of the *Moxos*, *Chiquitos*, and other tribes. Of course, great differences exist in so vast a number of tribes. Some, in the struggle for existence with their neighbours, have been victorious, have remained powerful, and with conscious strength have acquired that proud and independent feeling which forms the noblest phase of savage life, and gives rise to all the highest qualities of man in a state of nature. Others, crushed and scattered, have fled into the depths of the forests, and have sunk into a state of debasement, little better than the condition of the beasts which surround them. These phenomena are inevitable, and arise naturally from that utter disintegration and breaking up of the original nations of the Amazons which will, in all probability, terminate in their final extirpation. The process of disintegration must have been

¹ Except in the case of the *Jurís* and one or two other tribes.

going on for many centuries. Its original cause is buried in mystery, but its effects are melancholy in the extreme. "A whole race of men," says Martius, "is wasting away before the eyes of the world, and no power of philosophy or Christianity can arrest its proudly gloomy progress towards a certain and utter extinction. The present and future condition of this race of men is a monstrous and tragical drama, such as no fiction of the poet ever yet presented to our contemplation." There is indeed something awful in these sad reflections. Even within the period of authentic history the Amazonian tribes have made wide strides towards their doom. The accounts of great villages and populous countries in the valleys of the Amazonian tributaries, given by George of Spires, Philip von Hutten and other searchers after *El Dorado* cannot have been entirely fictitious. Alas! where are those flourishing communities now?

The evidence of language is in favour of the theory that these tribes, now like the sands on the sea shore for number, originally sprang from two, or at most three, parent stocks. Dialects of the *Tupi* language extend from the roots of the Andes to the Atlantic, and southward into Paraguay. Dr. Latham was enabled to group several languages together by similarities in their pronominal prefixes, and it is established that the differences in the roots, between the numerous Amazonian languages, are not so great as was generally supposed. The inquirer into this part of the subject will find a guide to further information in Trübner's *Bibliotheca Glottica*.

Some tribes of the Gran Chacu are included in the list, which more properly belong to the basin of the Rio de la Plata; but these tribes extend their wanderings, more or less, within the area of the Amazonian basin.

In using the list of tribes the most essential point to bear in mind is the *date* when the authority wrote who mentions any particular tribe; for many of the names may since have disappeared, either from their having been changed, or from the tribe having merged into some larger parent tribe, or from its having entirely disappeared and become extinct. It is, therefore, important that the following authorities, referred to in the list, and especially the dates when they wrote, should receive attention. The authorities have been arranged alphabetically instead of chronologically, for greater facility of reference.

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- 1st from 1638 to 1683.
 2nd „ 1683 „ 1727.
 3rd „ 1727 „ 1768.

This includes a period of 130 years. I have noted during which of these epochs any tribe mentioned by Velasco was preached to by the missionaries, because the names of many of them have now disappeared. Many of the larger tribes, extending their wanderings over vast tracts of country, are split up into numerous branches with distinct names. I have inserted all these branches in the list, with references to the parent tribes.

It is also necessary to bear in mind that the names by which many tribes are known to their neighbours have been given from without. Mr. Spruce, to illustrate this, told me that a young colony calls itself after its chief, but its neighbours soon give it another name, which the colony itself finally adopts. Thus the tribes of the Uaupés river have received their names from their Tupi neighbours. We have the Toucanos (Toucan Indians), so called for their long Roman noses suggesting a toucan's beak, the Piras (fish Indians), etc. So also the Omaguas or Cabebas (flat heads).

The best illustration that occurs to me, of the way in which the names of tribes originate, is given by that most companionable of old writers Cieza de Leon. He says that when he accompanied the first conqueror into the valley of the Cauca in New Granada, they named some Indians *Anzermas* because their country abounded in salt which, in their language was called *anzer* ; and that the *Gorriones* received their name because they came into the camp with baskets of fish crying *gorron gorron*, which is their name for fish.

Some of the Amazonian tribes are known by names given by the Spaniards, such as the *Chiquitos*, *Barbudos*, *Encabellados* and *Aguaricos*.

The present list contains many more names than the list of 1895, as there have been many more journeys into previously unknown regions, especially along the courses of rivers flowing from the Eastern Andes, and quite recently explored for the first time.

The alphabetical list is followed by lists of principal tribes classified according to the rivers they frequent.

ALPHABETICAL LIST OF TRIBES.

Aanas.—Same as *Ananas*.

Ababas.—A tribe in the forests watered by the two upper branches of the Corumbiara. *Martius*.

Abacaxis.—A tribe on the river of the same name.

Abactis.—A tribe on the river Madeira. *Acuña*, p. 117.

Abanas.—A tribe on the river Japura.

Abijiras, *Avigiras*, *Auxiras*, *Abiras*.—A tribe of the river Napo and Marañon, marked on Fritz's map (1707) near the banks of the Napo. They were preached to between 1638 and 1683, and they killed Father Pedro Suarez in 1667. They wandered in the forest to the south of the *Encabellados* (whom see). At the present day they are met with on the south side of the Napo, near its mouth, and have the same language and customs as the *Iquitos* (whom see). They live by fishing and the chase. Prince says that their three dialects are called *Cunje*, *Neva* and *Yurusnia*. *M. Rodriguez*; *Fritz's map*; *Acuña*, p. 94; *Velasco*; *Villavicencio*, p. 173.

Abipones or *Callagaes*.—A large tribe of the Gran Chacu, on the banks of the Bermajo and Rio Grande, the latter being a tributary of the Mamoré. They have no fixed abodes, and roam extensively in every direction. In the seventeenth century their houses were on the northern shore of the Rio Bermajo, but they removed to avoid the wars carried on by the Spaniards of Salta against the Indians of the Chacu, and settled in valleys farther to the south. At the beginning of the last century their wanderings extended from the Bermajo to the Paraguay, when they made frequent desolating excursions into the country settled by the Spaniards. They are well formed, and have handsome features, black eyes, and aquiline noses. In symmetry of shape they yield to no other nation in America. They have thick raven black hair and no beards. As soon as they wake in the morning the women, sitting on the ground, dress, twist and tie their husbands' hair. They pluck out the hair from the forehead to the crown of the head, accounting this baldness as a mark of their nation. The women have their faces, breasts, and arms covered with black figures of various shapes, thorns being used as pencils, and ashes mixed with blood as paint. The men pierce their lips and ears.

The *Abipones* are excellent swimmers, being taught before they can walk. No child is without his bow and arrow. They live on game, generally roasted. In Dobrizhoffer's time they did not number more than 5,000, having been thinned by internecine feuds, smallpox, and the cruelty of mothers towards their offspring. They are subdivided into hordes, each ruled by a chief called *Nelareyrat*, but these chiefs have little authority except in time of war. Their chief weapons are bow and spear, the latter

of great length. They fix them upright at the thresholds of their huts. Their bow strings are made of the entrails of foxes, and their quivers of rushes adorned with woollen threads of various colours. In battle they use a kind of armour made of the hide of a tapir, over which a jaguar skin is sewn. Their victories are celebrated by songs, dancing and drinking parties. In 1641 they first became possessed of horses, and were soon very dexterous in their management. The Jesuits established some mission villages among the *Abipones*. They are of tall stature. For five months in the year, while the floods are out, they live on islands or even in trees. When a mother is brought to bed with a child, the father also takes to his bed for some days. They do not bring up more than two children in a family, the others being killed to save trouble.

Dobrizhoffer devotes two chapters to a very interesting account of the language of the *Abipones*.

Dobrizhoffer ; Lozano ; Hervas, I, p. 176.

Abiras.—See *Abijiras*.

Acamoris.—A branch of the *Simigaes*. *Velasco*.

Acaneos.—A branch of the *Aguaricos*.

Acarapis.—A tribe of the River Parima. *Penna*.

Achaguas.—See *Guahiva*.

Achoarys or *Achoauris*.—A tribe of the Rivers Tiffé and Jurua formerly at Ega and on the islands of the Solimoens. *Ribeiro ; Martius*.

Achotos.—(*Prince*.)

Achuales.—A branch of the *Jeveros*, so called from their food being the fruit of the Achual palm (*Mauritia vinifera*), met with on the Pastasa, above the confluence with the Bobonaza. *Villavicencio ; Spruce's notes*.

Adorias.—A tribe of the River Japura. *Penna*.

Aethonias.—A tribe mentioned by Martius.

Agapicas.—A branch of the *Jeveros*. *Villavicencio*.

Agararis.—A tribe of the Rio Branco. *Penna*.

Agoyas.—A tribe of the Gran Chacu. *Lozano*.

Aguales.—(*Prince*.)

Aguanas.—A tribe of the Huallaga and Marañon. The men have beards and are very fierce, the women have fair hair like Flemings. *M. Rodriguez*.

Aguanacos.—A branch of the *Chepeos*. *M. Rodriguez ; Velasco*.

Aguaricos.—A tribe on the river of the same name, a tributary of the Napo. *Velasco*.

Aguarunas.—A tribe of the Marañon, near the Pongo de Manseriche, said to be a branch of the *Jeveros*. In 1859 they were met with by the Peruvian Bishop of Chachapoyas, and they have since been friendly. *Raimondi ; Larrabure*, xv, 400.

Aguas.—Same as *Omaguas*.

Aguayras.—A tribe of the Rio Negro. *Acuña*.

Aguilotes.—A tribe on the Gran Chacu. *Lozano*.

Ahuishiris.—A branch of the *Zaparos*.

Aicores.—A branch of the *Iquitos*. *Velasco*.

Aimsnes.—A branch of the *Huitotos*. *Robuchon*.

Airicos.—See *Goahivas*.

Aisuaris.—A tribe of the Marañon, 1683-1727. *Velasco*.

Ajuanas or *Chamicuras*.—A tribe of the Pampa del Sacramento, living one day's journey east of Laguna, in a village called Chamicura. *Smyth*, p. 204.

Alabonas.—A branch of the *Yameos*. *Velasco*.

Alaruas.—A tribe of the Japura and Solimoens. *Martius*.

Alones.—(*Prince*.)

Amagueses or *Amages*.—A tribe numerous on the Rivers Pichis and Huancabamba, and the Cerros de la Sal. Reported to be timid. *Girbal MS. Larrabure*, xv, 401.

Amajes.—(*Prince*.)

Amajuacas.—A tribe of the Ucayali, next to the *Remos*, and extending as far as the Vuelta del Diablo. They have been repeatedly converted to Christianity, but have more than once killed their priests and returned to their original state. From their apparently quiet and docile disposition the missionaries conceived great hopes of them, but they found themselves most cruelly deceived. They are short and have beards. They are hunters and live in the interior, seldom coming down to the rivers. *Smyth*, p. 232; *Herndon*, p. 199; *Raimondi*, p. 118; *Villanuevo*; *Prince*.

Amamatis.—A tribe between the Purus and Madeira. *Martius*.

Amamis.—See *Uamanis*.

Amaonas.—A branch of the *Yameos*. *Velasco*.

Amaribas.—A tribe of the Rio Branco. *Penna*.

Amazonas.—A tribe of female warriors. *Orellana in Herrera*; *Acuña*, p. 112.

Ambuas.—A tribe on the River Japura. *Penna*.

Amicuanos.—A tribe at the source of the River Anauerapucû. *Martius*.

Ammanius.—A tribe on the River Moju, near the mouth of the Tocantins. *Martius*.

Amueses or *Amueixas*.—*Sala*, 152; *Vocab. in Bol. S. G. Lima*, 3 Tri, 1907.

Amulalaes.—A tribe of the Gran Chacu. *Lozano*.

Anajas or *Anajazes*.—A tribe of the island of Marajo. *Martius*.

Anamaris.—A tribe of the River Madeira. *Acuña*, p. 117.

Ananas or *Ananais*. A small tribe on the Rio Branco and Rio Negro. *Martius*; *Wallace*.

Anaporecas.—(*Prince*.)

Anaxiases.—A tribe of the Pacaxa River. *Acuña*, p. 130.

Ancuterres.—A branch of the *Encabellados*. *Velasco*.

Andiras.—"Bat" Indians. A tribe between the upper waters of the Madeira and Tapajos. *Martius*.

Andoas.—A tribe of the Marañon. See *Muratos*. They were preached to from

1683 to 1727. On Fritz's map (1707) they are placed in the forest between the Tighe and Pastasa. According to Villavicencio and Tyler they are a branch of the *Zaparos*. There is a small village on the Pastasa called *Andoas*, where the remnants of the tribe are collected, about 30 families. *Velasco*; *Fritz's map*; *Villavicencio*; *Hervas*, i, p. 262; *Spruce's notes*; *Tyler*.

Andoques.—A tribe of Mocoa between the Rivers Caqueta and Putumayu. They were said to be cannibals. In 1903 the Colombians on the Putumayu asked for help from Iquitos against them. *Hervas*; *Larrabure*; *Hardenburg*; *Rice*.

Anduras.—A tribe of the Araganatuba. Same as *Andiras*. *Acuña*, p. 105.

Aneakis.—A tribe of the River Anibá. *Penna*.

Angoteras or *Anguteras*.—A tribe on the east bank of the Napo below the junction of the Aguarico. According to Villavicencio they are a branch of the Putumayus. They cultivate. *Prince*; *Villavicencio*.

Anianas.—A tribe on the River Apaporis. *Penna*.

Anibas.—See *Uanibas*.

Anicorés.—A tribe of the Rio Negro, now extinct or nearly so. Also on the Madeira. *Martius*; *Penna*.

Anishiris.—A tribe between the Napo and Curaray. *Col. Portillo in Larrabure*, xvii.

Anjenguacas.—A branch of the *Campas*. *Velasco*.

Antipas.—A branch of the *Jeveros*. *Raimondi*, *Sotomayor*.

Antis.—The same as the *Campas*. Once a great and powerful tribe in the forests east and north of Cuzco, especially in and near the valley of Santa Ana. They are mentioned in the Quichua drama of Ollantay, and the eastern division of the empire of the Incas was called *Anti-Suyu*. They were renowned for their ferocity. They wear a long robe secured round the waist, with a hole for the head, and two others for the arms. Their long hair hangs down over their shoulders, and the beak of a toucan on a bunch of feathers is suspended as an ornament round their necks. Their weapons consist of clubs, bows and arrows. They are closely allied to the *Chunchos*. They wander in the forests about the head waters of the Ucayali and its tributaries. They have good features and pleasant countenances. See *Campas*. *Garcilasso de la Vega*, ii, cap. 2; *Sarmiento*, 142; *Genl. Miller*, *R.G.S.J.*, vi; *Castelnau*, iv, p. 290; *Raimondi*; *Delgado*.

Antives.—A branch of the *Putumayus*. *Velasco*.

Aoquis.—A tribe of the River *Cauamé*. *Penna*.

Apamas.—A tribe of the Rivers Parú and Ginipapo. *Martius*.

Apantos.—The second tribe from the mouth of the River Cunuris, the head waters of which were said to be occupied by the Amazons. A branch of the great *Tupi* nation. *Acuña*, p. 122; *Martius*; *Hervas*, i, p. 149.

Aparia.—An Indian chief in whose territory Orellana built his brigantine. The Spaniards left the village of Aparia on the 4th of April, and reached the

mouth of the River Putumayu on the 12th of May, going down stream.
Herrera.

Apenaris.—A tribe of the River Jutay. *Martius*; *Penna.*

Apera.—A tribe of the River Amazon below the mouth of the Madeira.
Acuña, p. 117.

Apiacas.—A tribe of the Gran Chacu. *Lozano.*

Apiacares.—A small tribe of the Tapajos, higher up than the *Mundrucus*. They go quite naked and wear the hair short. *Chandless*; *H. Smith*, p. 253.

Apinages.—Same as *Ges*.

Apolistas.—Civilised Bolivian tribe of Apolobamba. *Prince*; *Chervin*, i, 50.

Aponarias.—A tribe on the Rio Negro, now nearly if not quite extinct. *Martius*; *Penna.*

Apotas.—A tribe on the River Nhamunda. *Penna.*

Apurinas.—A cannibal tribe on the upper part of the River Purus. Serafim says they are constantly attacking the *Cocomas* Indians settled there. *Serafim.*

Aquiris.—Mr. Chandless met with a tribe with no special name, at the head waters of the Aquiri, a tributary of the Purus. It is distinct from the tribe next below them on the river, the *Capechenes*, both in feature and language. The *Aquiris* obtain iron from the *Maneteneris* on the Purus, and use a good many *Maneteneri* words. The *Taxaua* or chief wears a poncho and hood exactly of the *Maneteneri* fashion. They have dogs, but no other domesticated animals. Their *ubas* are generally of *pexiuba* or cedar. *Chandless.*

Arabonas.—(*Prince.*)

Araboyajus.—A branch of the *Tupis*. *Hervas*, I, p. 149.

Aracajus.—A tribe on the Urubucua, in the neighbourhood of Almeirim and Montalegre. *Martius.*

Araguanayas.—See *Carabayan*as.

*Arahuana*s.—(*Prince.*)

Araonas.—Same as *Cavinas*. An extensive tribe on the northern bank of the Mayu-Tata (Madre de Dios): Armentia describes them as very gentle, inclined to intercourse, and remarkably white complexioned. Paz gives a vocabulary. *Church*; *Armentia*; *Evans*; *Prince*; *Chervin*; *Paz.*

Araparecas.—A branch of the *Chiquitos*. *Hervas.*

Arapassos.—A tribe of the Rio Negro. *Wallace.*

Araquizes.—A tribe on the Rio Negro who were among the first settlers at the Portuguese town of Barra. *Spruce's notes.*

Araras.—A very fierce tribe on the lower Madeira and between that river and the Tapajos, with no settled habitations. They do not plant manioc. They engage in deadly wars with the *Mundrucus*. *Martius.*

Arasa or *Arasairis*.—On the Marcapata River. The chiefs are called *Hauiris*. The women beautiful. *Nordenskiöld*; *Larrabure*, xv, 402.

Arauas.—A tribe on the River Jurua. *Bates.*

Araucas.—Probably the same as Bates's *Arauas*. *Martius.*

Araycus.—See *Uaraycas*.

Arayes.—A tribe on the southern tributaries of the Araguay. *Martius*.

Arazas.—A branch of the *Simigaes*. *Anonimo*; *Velasco*.

Ardas.—A branch of the *Yameos* between the Napo and Nanay. *Velasco*;
Villavicencio.

Arekainas.—A tribe on the Rio Negro and on the upper waters of some of its tributaries. They make war upon other tribes to obtain prisoners for food.

In their religious ideas they resemble the *Uaupés*. *Wallace*, p. 508.

Aricorones.—A tribe of the San Simao, a tributary of the Itinez. *Martius*.

Ariquenas.—A tribe of the Putumayu, according to Spix, but probably the same as the *Arekainas*, also on the Madeira. *Spix und Martius*, iii, p. 1136; *Penna*.

Armabutos.—A tribe now extinct or nearly so, at the sources of the Anaurapucá. *Martius*.

Armueshes or *Amages*.—On the Pichis and Huancabamba. See *Amages*.

Aroas.—A branch of the great *Tupi* tribe, at the mouth of the Pará. *Herva*, i, p. 149.

Aroes.—See *Arayes*.

Aroaquis or *Arubaquis*.—Marked on Fritz's map (1707) near the north shore of the Amazons, and below the mouth of the Rio Negro, called also by the Portuguese *Orelhudos*, or long ears. *Fritz's map*; *Martius*.

Arunas.—A tribe on the Jurua. *Penna*.

Assai Taprujas.—See *Juris* and *Uainumas*.

Ataguates.—A tribe of the Marañon preached to between 1638 and 1683. *Rodriguez*; *Velasco*.

Atsahuaca-Guaray.—Between the Inambari and the Tambopata. They speak the Pana language. They wear bark shirts without sleeves, and are armed with bows and arrows. They are not numerous. Charming dispositions and affectionate natures. Very cleanly in their habits, bathing every day. Splendid swimmers, and adepts at spearing fish. *Nordenskiöld*; *Bernacchi*.

Atuais.—A tribe on the Putumayu. *Acuña*, p. 99.

Aturiaris.—A tribe on the Araganatuba. *Acuña*, p. 105

Aunares.—A branch of the *Ugiaras*. *Velasco*.

Auxiras.—See *Abijiras*.

Avanateos.—A tribe marked on Fritz's map (1707) between the Ucayal and Yavari.

Avijiras.—See *Abijiras*.

Ayacares.—A branch of the *Iquitos*. *Velasco*.

Ayapas.—(Prince.)

Baccahazes.—A tribe near the sources of the Juruena. *Martius*.

Baccahirys.—A tribe with very white skins near the sources of the River Xingu. *Martius*.

Bacuris.—A tribe of the River Arinos. *Martius*.

Baenas.—A tribe of the Rio Negro, now extinct or nearly so. *Martius*.

Baibucas.—A tribe of the River Jurua. *Penna*.

Baniwas.—A tribe of the River Isanna, of the same family as the *Barres*. *Spruce* ; *Wallace*, p. 529.

Barbudos.—See *Mayorunas*.

Barrés.—An important tribe on the upper part of the Rio Negro, the Cassiquiari, and the head waters of the Pacimoni and Marainá. The word Barré means comrade, but it appears to be modern. *Spruce* gives eight branches of the Barré tribes as follows :—

*Barrés, Mandanacas, Guariquenas, Cunipusanas, Pacimonaris,
Yabahanas, Masacas, Tarianas.*

The *Barrés* are said to be absorbing the kindred nations, and since the beginning of the last century their language has become, without any aid of missionaries, the general language of the Indians of the Orinoco above the cataracts, of the Cassiquiari, of the Rio Negro, and of many of the tributaries of these rivers. The reason for this appears to be found in the character of the *Barré* Indian himself, who is more active, more amorous, more uproarious, and more pugnacious than any of his neighbours. The headquarters of the *Barrés* was, and may still be, at San Carlos del Rio Negro, and people of that nation are scattered over the whole Cassiquiarian region, even to Maypures on the Orinoco. *Spruce* made a vocabulary of the *Barré* language, which he says is really melodious. *Spruce's notes*.

Batasicas.—(*Prince*.)

Batuicos.—A branch of the *Huambisas*.

Bauhunas.—A tribe of the Uaupes. *Wallace*.

Baures.—A tribe of the *Moxos* Indians near the River Itenez. They killed Father Boraza in 1702. Settled in the missions of Concepcion and San Joaquin. *Hervas* ; *Keller* ; *Prince*.

Baziuara.—A tribe of the River Jurua. *Penna*.

Bazorocas.—A branch of the *Chiquitos*. *Hervas* ; *Prince*.

Becabas.—A branch of the *Aguaricos* on the Napo. *Acuña*, p. 74 ; *Velasco*.

Bejosos.—Same as *Mataguayos*.

Betocuros.—A branch of the *Papaguas*. *Velasco*.

Bilelas.—See *Vilelas*.

Blancos.—A branch of the *Iquitos*. *Velasco*.

Boanaris.—A branch of the Uaupés. *Penna*.

Bocas.—A tribe of the River Pacaxa, see *Cambocas*. *Acuña*, p. 120.

Bohococas.—(*Prince*.)

Bolepas.—A branch of the *Moxos*. *Hervas* ; *Prince*.

Bonamisayes.—(*Prince*.)

Boocas and *Boras*.—Branches of the *Chiquitos*. *Hervas*.

Boras.—A tribe on the Igara-parana, and on the Putumayu, very hostile. *Larrabure*, xv, 640, 403 ; *Hardenburg*.

Boros.—(*Prince*.)

- Borores*.—A tribe hostile to the Portuguese, near the sources of the Uruguay. *Martius*.
- Botocudos*.—A Brazilian tribe on the Tocantins with a very low type of skull.
Hervas; *Moreno*.
- Bugés*.—A tribe on the River Jutay. *Martius*.
- Burais*.—A tribe on the River Amazons, below the mouth of the Madeira.
Acuña, p. 117.
- Bus*.—A tribe on the south side of the River Pará. *Martius*.
- Busquimpanes*.—See *Capanahuas*.
- Cabaros*.—A tribe on the River Tocantins. *Hervas*.
- Cabinas*.—A branch of the Moxos. *Hervas*; *Prince*, p. 79.
- Cabixis-u-Adjururis*.—A tribe near the sources of the Jamary. *Martius*.
- Caburicenás*.—A tribe of the Caburi. *Penna*.
- Caca Tapuujas*.—See *Juris*.
- Cachicuaras*.—A tribe on the south bank of the Amazon, same as the *Cuchiguaras*.
Acuña, p. 55.
- Cachivos*.—See *Cachibos* (*Sala*).
- Caduveos*.—(*Prince*.)
- Caguarans*.—A tribe of the Araganatuba. *Acuña*, p. 105.
- Cahans*.—"Men of the woods." See *Guanans*.
- Cahuaches*.—A branch of the *Jeveros*. *Velasco*.
- Cahuamares*.—Same as *Cahuaches*.
- Cahuapanaes*.—(*Prince*.) A tribe of the Upper Manañon. Visited by Jesuits, 1644.
- Cahuayapitis*.—A tribe of the Rio Negro. *Acuña*, p. 110.
- Cardullas*.—(*Prince*.)
- Caipitorades*.—A branch of the *Chiquitos*. *Hervas*; *Prince*.
- Caishanas*.—A tribe in the forest near the Tonantins. A branch of the *Shumanas*.
They only number about 400 souls and are very debased. *Bates*, ii, p. 273.
- Callagaes*.—See *Abipones*.
- Callisecas*.—Same as *Cashibos*.
- Camarares*.—A tribe wandering between the Rivers Jamary and Camararas. *Martius*.
- Camaticas*.—(*Prince*.) On the Tambo and Ene.
- Camavos*.—A tribe of the Marañon preached to between 1685 and 1727. *Velasco*.
- Cambebas*.—Portuguese name for *Omaguas*.
- Cambocas*.—A branch of the great *Tupi* tribe in the bay east of the mouth of the Tocantins. *Martius*.
- Campas*.—Same as the *Antis*. They are said by Velasco to be descended from Inca Indians. Marked on Fritz's map (1707) near the head waters of the Ucayali. *Velasco*; *Hervas*, i, p. 262; *Urquhart*; *Delgado*; *Prince*; *Sotomayor*; *Sala*. *Sala* gives a *Campa* vocabulary. *Larrabure* gives their localities on the Apurimac, Pangoa, Perene, Pichis, Upper Ucayali, and on the Vilcamayu from the Chuguaris to the Camisea. They are muscular, good canoe men, the women beautiful. The men wear a diadem of flowers. (See *Antis*.) *Larrabure*, xv, p. 403.

Campevas.—See *Cambebas*.

Camuchiros.—A tribe met with in the end of the eighteenth century near the mouth of the Napo. They were docile and humane, but very serious and circumspect. *Mem. de los Vireyes*, vi, p. 144.

Canacures.—A branch of the *Moxos*. *Hervas*.

Canamaris.—A tribe of the Rivers Jurua and Purus. Serafim says that they are cannibals, are met with in the upper part of the Purus, and are constantly attacking the villages of *Cocoma* Indians there. But Manuel Urbino found the *Canamaris* on the Hyuacú, an affluent of the Purus, peaceful and agricultural. The force of the nation is on the Curumahá, a tributary of the Purus. Chandless gives a few words of their language. They use crowns of feathers. *Spix und Martius*, iii, p. 1183; *Bates*, ii, p. 379; *Chandless*; *Serafim*; *Urbino*.

Cangaparangas.—A savage tribe of the Madeira. *Heath*.

Canichanas.—See *Canisianas*.

Canisianas.—A branch of the *Moxos*. They are settled in the mission of San Pedro. A vocabulary of their language was made by Dr. Heath. *Hervas*; *Keller*; *Heath*.

Capanahuas.—A tribe on the Ucayali, between the *Sencis* and *Mayorunas*, with whom they are always at war. They go quite naked and are said to be a bold race; but they have no canoes, are not numerous, and are consequently not much feared. Dr. Girbal made two unsuccessful expeditions in search of them from Sarayacu, in the early part of 1723. They eat their dead like the *Cocomas*, and their houses are very large, many families living together. They are marked on Fritz's map (1707) between the Ucayali and Yavari. There is a picture of a *Capanahua* in the Report of the Viceroy Gil Taboada y Lemos. *Mem. de los Vireyes*, vi, p. 135; *Fritz's map*; *Mercurio Peruano*, No. 381; *Smyth*, p. 225; *Sotomayor*; *Prince*.

Capechenes.—A tribe on the Aquiri, a main tributary of the Purus. They live away from the river banks, and do not use canoes, but rafts. The *Capechenis* of Prince.

Capuenas.—A tribe of the Ixié. *Penna*; *Chandless*.

Carabuyanas.—A tribe of the River Amazons, below the mouth of the Basururu, a branch of the Japura. In Acuña's time they were divided into the following sixteen branches:—

Caraguanas, *Pocoanas*, *Vrayaris*, *Masucaruanas*, *Quereus*, *Cotocarianas*,
Moacaranas, *Qrorupianas*, *Quinarupianas*, *Tuinamaynas*,
Araguanaynas, *Mariguyanas*, *Yaribarus*, *Yarucaguacas*,
Cumaruruayanas, *Curuanaris*.

They used bows and arrows, and had iron tools obtained from other tribes who traded with the Dutch in Guiana. *Acuña*, p. 108.

Caraguanas.—See *Carabuyanas*.

Carangas.—A branch of the *Chunchos*, in the forests of Caravaya. *Pimentel*; *Paul Macoy*; *Prince*.

Carapaches.—See *Cashibos*.

Carapanas.—A tribe on the Rio Negro, and a branch of the large tribe of *Uaupés*.
Acuña, p. 110.

Carayas.—A tribe on the west side of the Araguay river. *Martius*.

Carcanas or *Cauanas*.—A race of dwarfs on the River Jurua. *Castlenau*.

Cariguanas.—A tribe near the source of the Trombetas, perhaps the same as the
Carabuyanas of *Acuña*. *Martius*.

Caripunas.—A tribe on the Madeira near the falls. They swell themselves out by eating earth, but are otherwise strong and healthy. The men wear beads of hard wood round their necks, and bands fastened round their wrists and ankles. They are not numerous. According to Spix they are met with on the Jurua. A chief named *Caripuna* is mentioned by Orellana. They are marked on Fritz's map (1707) near the Rio Branco. *Martius* mentions them as a branch of the great tribe of *Maurés* and as wandering near the sources of the Rio Negro, Trumbetas, and Essequibo. He says that this and the preceding tribe are of Carib origin. *Orellana* in *Herrera*; *Acuña*, p. 107; *Spix*, iii, p. 1183; *Martius*; *Keller*; *Prince*.

Caruanas.—See *Jumanas*. *Fritz's map*; *Martius*; *Gibbon*, p. 295.

Casabes.—(*Prince*.)

Cashibos, *Callisecas*, or *Carapaches*.—The word *Cashibo* means a vampire bat in the Pana language. A tribe on the west side of the Ucayali, as far as the head waters of the Rivers Pisqui and Aguatyá, and on the east side of the Pachitea. In 1651, Father Cavallero resided for some time in their country, but they killed the priests who were left there by him. In 1661, they drove Father Tineo away, and in 1704 they killed and ate Father Geronimo de los Rios. In 1744, they joined the famous Juan Santos, an Indian who had been outraged by the Spaniards at Ayacucho. He destroyed all the missions of the Cerro de la Sal, near Tarma. Until lately no one dared to venture among them, and they live scattered about in the forests like wild beasts. The majority of them live on the Pachitea, which they navigate on rafts. They are said to be cannibals, but Girbal and Raimondi doubted this, and the latter thinks that if they ate their old people, it is more from religious superstition than from cruelty. The men have beards and wear long frocks. The women go naked until they are married, after which time they wear a waist cloth. The men are very dexterous in hunting. When one of them is pursuing the chase in the woods and hears another hunter imitating the cry of an animal, he immediately makes the same cry to entice him nearer, and, if he is of another tribe, he kills him if he can, and (as is alleged) eats him. The *Cashibos* are in a state of hostility with all their neighbours. They have large houses and live inland away from the rivers during the rainy season, but in the dry time they resort to the river banks. Their weapons are clubs, lances, bows, and arrows. A Viceroy of Peru, in 1796, reported to his Government that the *Cashibos* were as white as Germans, with long

beards, and that they went quite naked. There is a picture of a *Cashibo* in the Report of the Viceroy Gil Taboada y Lemos. The missionary Girbal was astonished at the beauty of their women. Father Calvo has visited the *Cashibos* several times since 1857. *Mem. de los Vireyes*, vi, p. 130; *Girbal MS.*; *Smyth*; *Herndon*; *Raimondi*; *Sala*; *Sotomayor*.

Casuas.—(*Prince*.)

Catanices.—Indians of the Icuain, tributary of the Mucuin falling into the Purus. *Larrabure*, xv, 406.

Cataquinas.—See *Catuquinas*.

Catauixis.—A tribe on the Jurua, evidently the same as the *Catauxis*. *Spix und Martius*, iii, p. 1183.

Catauxis.—A tribe on the River Purus, 16 to 30 days voyage up. They have houses, sleep in hammocks, and cultivate manioc. They go naked, wearing rings of twisted hair on their wrists and ankles. They use the blow-cane and poisoned arrows. The canoes are made of the bark of a tree. They use the powder of the roasted seeds of the *Acacia Niopo* as a narcotic. They eat forest game, tapirs, monkeys, and birds; and they are cannibals, eating Indians of other tribes. They are numerous and warlike. Acuña called them *Quatausis*. They are also met with on the upper Teffé, between the Jurua and Purus, and between the Purus and the Madeira, especially on the Mucuin. Chandless describes them as a fine, handsome tribe, free from the *puru-puru* skin disease, and remarkably clear complexioned. He says that they are warlike if attacked, and prompt to guard their own; but by disposition peaceful and industrious, fond of agriculture, and even of manufacture. Their manioc flour is good, their pottery very neat, and ornamented with geometric patterns. *Acuña*, p. 107; *Martius*; *Spruce's notes*; *Wallace*; *Bates*; *Chandless*.

Catianas.—A tribe on the River Purus said to have come from the west. *Chandless*.

Catongos.—(*Prince*.)

Catuquinas.—A tribe of the River Jurua. They use the blow-cane and poisoned arrows, as well as bows and arrows; and they live on monkeys, fish, and snakes. *Spix und Martius*, iii, p. 1184; *Bates*, ii, pp. 241 and 379.

Cauanas.—A race of dwarfs on the River Jurua, only four or five spans high. One of them was seen by Von Spix at Pará (see *Carcanas*). *Spix*, iii, p. 1183; *Penna*.

Cauaxis.—A tribe of the Rivers Jurua and Jutay. *Penna*.

Caviaris.—A tribe of the Japura. *Penna*.

Caupezes.—A tribe in the Brazilian province of Matto Grosso. *Martius*.

Cautarias.—A tribe on the river of the same name, a tributary of the Itenez. *Martius*.

Cauxanas.—A tribe between the Putumayu and Japura who are said to kill their first-born children. They eat alligators. *Spix und Martius*, iii, p. 1185; *Wallace*, p. 511.

Caviñas.—One of the tribes of the Madre de Dios, and on the Rivers Tahuamanu or Orton, and Manuripi. Some of them are gathered in a mission on the Beni. They are said to be the same as the *Araonas*. *Church* ; *Armentia*, p. 50.

Cavinenos.—(*Prince*.)

Cayanas.—A tribe of the River Madeira. *Acuña*, p. 117.

Cayapas.—A tribe on a river of the same name in Ecuador. *Basurco*.

Cayubabas.—A branch of the *Moxos*. Their chief was called *Paytiti*. They are settled in the mission of Exaltacion de la Santa Cruz. They are excellent boatmen. Dr. Heath collected a vocabulary of their language. *Reise Beschreibungen* ; *Keller* ; *Heath* ; *Prince*.

Cericumas.—A tribe of the Yauapiri. *Penna*.

Chacobos.—Savages on the west side of the Mamoré down to the Beni. *Heath* ; *Armentia's map* ; *Prince*.

Chais.—A branch of the *Chepeos*. *Velasco*.

Chaintas.—A tribe of the Yavari. *Penna*.

Chamacocos.—(*Prince*.)

Chamaros.—(*Prince*.)

Chamicuras.—See *Ajuanas* (*Prince*). A tribe of the Upper Marañon.

Chana-Kinakinaos.—(*Prince*.)

Chanes.—A people of the Gran Chacu. In former times they were enslaved, after wars with the *Chiriguanas*, but afterwards, multiplying, they freed themselves, and went to live apart in the neighbourhood of Santa Cruz de la Sierra. *Hervas* ; *Prince* ; *Chervin*.

Chapas.—A branch of the *Ruamaynas*. They wander along the banks of the Pastasa river, and between that river and the Morona. *Rodriguez* ; *Velasco* ; *Villavicencio's map*.

Chapacuras.—(*Prince*.)

Charentes.—A numerous and widely spread tribe on the banks of the Araguay and Tocantins. *Martius*.

Chauitas.—A tribe of the River Yavari. *Penna*.

Chavelos.—A branch of the *Aguaricos*. *Velasco*.

Chayavitas.—Indians of the Upper Marañon of the first missionary epoch, 1638–1683. Chayavitas was a village containing about 300 inhabitants on the left bank of the River Paranapuras. *Rodriguez* ; *Velasco* ; *Hervas*, i, p. 202 ; *Raimondi* ; *Prince*.

Cheduas.—(*Prince*.)

Chepenaquas.—A branch of the *Chepeos*. *Velasco*.

Chepeos.—A numerous tribe of the Marañon of the first missionary epoch. *Rodriguez* ; *Anonimo*, p. 389 ; *Velasco*.

Cheseyes.—(*Prince*.)

Chibaras.—A tribe of the River Jutay. *Martius* ; *Penna*.

Chichas Orejones.—A tribe of the Gran Chacu met with between the *Chiriguanas*

and *Guaycurus*, in a very inaccessible country. They dress in cloth made from llama wool, and are said to work in silver mines. The Incas employed them on this work, and it seems probable that they composed one of the *Mitimaas* or colonies of the Incas. They live peaceably with another tribe of Indians called *Churumatas*. They cultivate the land, and come down to the River Bermejo to fish; but are very careful to prevent the Spaniards from discovering a road into their country. They are called *Orejones* from the "*Orejones nobles del Cuzco*," or nobles of the Incas. *Lozano*; *Hervas*.

Chillivos.—A tribe in the Bolivian province of Capaulican. *Evans*.

Chimanas.—A tribe of the River Yavari. *Martius*; *Penna*.

Chimanis.—See *Mocetenes*.

Chimbiuas.—See *Ximbiuas*.

Chipicas.—A Ucayali tribe. *Prince*.

Chiponauas.—The most distant tribe reached by the Inca Tupac Yupanqui. *Sarmiento*.

Chiquitos.—A numerous group of tribes in the province of Santa Cruz de la Sierra, in Bolivia, and between the head waters of the Rivers Mamoré and Itenez. They are considered as minors by the Bolivian Government, and they cultivate cotton and sugar cane. Their produce is sold for the benefit of the community, and a fund is formed for the relief of the infirm and aged. The word *Chiquito* means very small in Spanish, a name which was given to these Indians by the early Spaniards for the following reason. When the country was first invaded, the Indians fled into the forests; and the Spaniards came to their abandoned huts, where the doorways were so exceedingly low that the Indians who had fled were supposed to be dwarfs. Their houses are built of adobes, and thatched with coarse grass. They manufacture their own copper boilers for making sugar, and they understand several trades. They also weave ponchos, use hammocks, and make straw hats. They are very fond of singing and dancing, and seldom quarrel among themselves. They are a peaceful race. When a *Chiquito* Indian takes a fancy to wearing striped trousers, he plants a row of white and a row of yellow cotton. Should he wish for blue, he plants a row of indigo. The heart-leaved *Bixa orellana* grows wild around him, the vanilla bean scents the doorway of his hut, while coffee and cocoa trees shade it. The *Chiquito* group of Indians is divided into forty tribes: *Chirivones*, *Taos*, *Boros*, *Tabucas*, *Tannopicas*, *Xuberesas*, *Zamanucas*, *Bazorocens*, *Puntagicas*, *Quibiquibas*, *Pequibas*, *Zemuquicas*, *Taumocas*, *Cucicas*, *Quimomecas*, *Tapucuracas*, *Yuracarecas*, *Yuritucas*, *Imonos*, *Morotocas*, *Cucurares*, *Boocus*, *Tubacicas*, *Aruparecas*, *Piococas*, *Quimecas*, *Quapacas*, *Quitagicas*, *Pogisoens*, *Metaquicas*, *Mamacicas*, *Sibacas*, *Zamucos*, *Zahenos*, *Ugorannos*, *Caipitoruds*, *Tunachos*, *Timinabas*, *Tomoenos*, *Pananas*.

These tribes speak seven different languages, called *Tapacuraca*, *Napeca*,

Painaca, Paiconeca, Quitemoca, Zuracariguia, Moncoca, the latter being the most prevalent. Dr. Latham has some remarks on the *Chiquito* languages and lists of words. *Hervas* i, p. 158; *Castelnau* iii, p. 217; *Martius*; *Gibbon*, p. 164; *Latham*; *Chervin*.

Chiriapenas.—(Prince.)

Chiricoas.—See *Goahivas*.

Chiriguanas.—A tribe of the Gran Chacu nearest to the confines of Bolivia speaking a *Guarani* language, and supposed to be a branch of that widespread nation. When the Incas conquered them they were indiscriminate cannibals; and in 1571 they repulsed the invasion of the Spaniards led by the Viceroy Toledo in person. They wear a blue wafer-like ornament on the upper lip. Their women are exempt from servile employment. Their range is from Santa Rosa to the River Bermejo, near Tarija, 18° S. to 22° S. *Garcilasso de la Vega*; *Dobrizhoffer*; *Chervin*, i, p. 82; *Lozano, Pelleschi*.

Chirionossos.—A tribe of the Bolivian Gran Chacu. *Pelleschi*, p. 31.

Chiripunos.—A tribe on the head waters of the Curaray. *Villavicencio's map*.

Chiuipos.—A tribe in the Argentine Gran Chacu. *Pelleschi*.

Cholones.—A tribe of the Huallaga, on the left bank. The name must have been given them by the Spaniards. They were first met with by the Franciscans, in 1676, in the forests near the Huallaga, who established them in mission villages. They are now found in the villages of Monzon, Uchiza, Tocache, and Pachiza on the Huallaga. Their skin is a dark brown, they have shiny black hair, scarcely any beard, arched nose, and high cheek-bones. They consider themselves great doctors and are very superstitious. They are proud, perverse, and fond of a wild life; courageous, cheerful, good tempered, and sober. They use the blow-cane, called by the Spaniards *cerbatana*, by the Portuguese *gravatana*, and by the Indians *pucuna*. It is made of a long straight piece of wood of the chonta palm, about 8 feet long, and 2 inches in diameter near the mouth end, tapering to half an inch at the extremity. The arrow is made of any light wood, almost a foot long. A good marksman will kill a small bird at thirty or forty paces with a *pucuna*. Raimondi says that the *Cholones* are idle, and pass a great part of their day drinking *masato*, but that they are expert hunters with the *cerbatana*. *Mercurio Peruano*, No. 51; *Pöeppig, Reise*, ii, p. 320; *Herndon*; *Raimondi*; *Sala*; *Girbal MS*.

Choltos.—(Prince.)

Chontaderes.—(Prince.)

Chorotis.—South-east of the *Tobas*, on the left bank of the Pilcomayu. The least civilised tribe of the Chacu. *Chervin*, I, p. 140.

Chudarinas.—A branch of the *Andoas*. *Velasco*; *Girbal MS*; *Sala*.

Chufias.—A branch of the *Aguaricos*. *Velasco*.

Chumanos.—(Prince.)

Chunchos.—A numerous and formidable group of tribes to the eastward of Cuzco

and Tarma, first reduced to subjection by the Inca Tupac Yupanqui. They are said, by Velasco, to be descended from Inca Indians. Those to the eastward of Cuzco are divided into three branch tribes—*Huachipayris*; *Tuyuneris*; *Sirineyris*. In Marcapata and Carabaya there are two other branches—*Carangas*, *Suchimanis*.

They call their chiefs *Huayris*. General Miller, in 1835, met with a chief and some of the *Huachipayris* in the montána of Paucartambo, where the River Madre de Dios takes its rise. Their hut was well built on a rising ground, wall 6 feet high, and a good straw roof. The *Huayri*, or chief, was 5 feet 10 inches high, well made, of good cast of feature, and a jovial disposition. These Indians are afraid to be in utter darkness for fear of evil spirits. They cultivate maize, yucas, plantains, and pine-apples. They live in long huts, twenty persons in each, and wander for leagues through the matted forest in search of game. They have no religion whatever, bury their dead in their huts, and are fierce, cruel, and untameable.

The *Chunchos* of the forest near Tarma are quite independent, very fierce and formidable. *Garcilasso de la Vega*, i, vii, 14; *Sarmiento*, p. 143; *Velasco*; *General Miller*, *R.G.S.J.*, vi, p. 182; *Von Tschudi*; *Markham* "*Cuzco and Lima*" and *R.G.S.J.*, xxv, *Gibbon*; *Sala*.

Chunipies.—A tribe of the Gran Chacu between the Rio Grande and Bermejo. They are said to be descended from Spaniards, and are very peaceful and courteous, and they cultivate maize, besides their food derived from fishing and hunting. They go quite naked, and are constantly at war with the *Tubas* and *Mocovies*, but live in friendship with four other tribes who appear to be of the same origin, and who resemble each other closely—the *Tequetes*, *Guamalcas*, *Yucunampas*, and *Velelas*. *Lozano*.

Chuntaquirus.—Same as the *Pirros*.

Chuntis.—(*Prince*.)

Churitunas.—A branch of the *Jeveros*. *Rodriguez*; *Velasco*.

Churumatas.—See *Chichas Orejones*.

Chuzcos.—A tribe of the Huallaga, established in a mission village by the Franciscan Friar Lugando in 1631. *Mercurio Peruano*.

Cingacachuscas.—A tribe supposed to have been descended from Inca Indians; now extinct. *Velasco*.

Cionis.—A tribe on the Putumayu. *Hardenburg*.

Cipos.—A small and friendly tribe on the Tapaúa, a tributary of the Purus. They are very industrious. *Chandless*.

Cirus.—A tribe on the Solimoens, now probably extinct. *Martius*.

Ciures.—A tribe of the River Pastasa. *Rodriguez*.

Clituas.—A tribe of the River Japura. *Penna*.

Coahunas.—See *Cahans*.

Coata-Tapuujas.—A tribe of the River Jurua, reported to have short tails. *Von Spix*, iii, p. 1183; *Castelnau*.

Tobeus.—See *Uaupès*.

Cocamillas.—A branch of the *Cocomas* settled at Laguna on the Huallaga. They are lazy and addicted to drink, but good canoe-men. *Rodriguez*; *Raimondi*; *Velasco*; *Larrabure*; *Herndon*.

Cocomas, *Cucamas*, or *Cocamas*.—A tribe of the Marañon and Lower Huallaga of the first missionary epoch, 1638–83. Spruce suggests that they are a remnant of the *Tupinambas*. Their province was called by the missionaries *La Gran Cocoma*. They built their huts round a beautiful lake near the mouth of the Huallaga, where Father Lucero established a mission. In 1681 they were still in the habit of eating their dead relations and grinding their bones to put the powder into their fermented liquor. They said it was better to be inside a friend than to be swallowed up by the cold earth. In 1830 they moved from Laguna to Nauta, at the mouth of the Ucayali. They are bolder than most of the civilised Indians, and they carry on war with the savage *Mayorunas*. When the Brazilian expedition explored the River Purus in 1852, the leader of it reported that the last seven villages on that river, extending to the extreme limit of navigation, were inhabited by *Cocomas*, but Mr. Chandless has since shown that these were not *Cocomas*, but *Maneteneris*. The language of the *Cocomas* is a dialect of, and very much resembles, the *Tupi*. Bates speaks very highly of the *Cocomas* as a shrewd, provident, hard working people, and they are good canoe men. *Pöeppig*, *Reise*, ii, p. 449; *Herndon*, p. 176; *Rodriguez*; *Bates*, ii, p. 159; *Spruce's notes*; *Raimondi*.

Cocrunas.—A tribe of the Japura and Teffe. *Ribeiro*; *Penna*.

Coerunas.—A tribe of the Japura. They are, in general, small, strong, and dark, with nothing agreeable in their faces. They intermarry very much among relations, and Martius gives this as a cause of their degenerating. Their language, spoken through their noses, sounds disagreeable. *Spix und Martius*, iii, p. 1201; *Penna*.

Coeunas.—A tribe of the River Uaupés. *Penna*.

Cofanes.—A tribe in the forests, 60 leagues east of Quito, at the head waters of the River Aguarico, near the foot of Mount Cayambe. At the beginning of the 17th century they were very numerous (15,000). They were preached to by Father Rafael Ferrer from 1602 until they killed him in 1611. They are now much reduced in numbers, and have lost their former fierce character. They speak a harsh guttural language in five dialects. *Velasco*; *Montesinos*; *Villavicencio*; *Hervas*.

Cohidias.—See *Uaupés*.

Cohumares.—A tribe of the Marañon, preached to between 1727 and 1768. *Velasco*.

Colchaquies.—A tribe of Tucuman and in the southern part of the Gran Chacu. They resisted the invasion of the Spaniards of Salta and Jujuy very bravely, and were not entirely subdued until 1665. In 1659 they followed

Pedro Bohorques in his crazy expedition in search of Paytiti. *Lozano ; Dobrizhoffer.*

Collinas.—A tribe of the Rivers Jurua and Yavari supposed to be a branch of the *Ticunas*. *Penna ; Bates*, ii, pp. 199, 395.

Comabas.—(*Prince*.)

Comacoris.—A branch of the *Simigaes*. *Velasco.*

Comanis.—A tribe of the Rio Negro, now nearly, if not quite, extinct. *Martius.*

Comavos.—A tribe said by Velasco to be descended from the Inca Indians, preached to between 1683 and 1727. *Velasco.*

Comeyones.—(*Prince*.) A branch of the Huitotos, on the Putumayu.

Conamarés.—A tribe of the River Jutay. *Martius.*

Conambos.—A tribe on the head waters of the River Tigrè. *Villavicencio's map.*

Conejoris.—A branch of the *Simigaes*. *Velasco.*

Conibos or *Manoas*.—A tribe of the Pampa del Sacramento and the banks of the Ucayali. They were first visited by missionaries between 1683 and 1727. In 1685 some Franciscans came by the Pachitea and formed a mission amongst them, but these friars were killed by the *Cashibos*. In 1695 Father Rieter was killed by the *Conibos*. At present most of the *Conibos* profess Christianity, thanks to the exertions of Fathers Girbal and Plaza. They are quiet, tractable people. They paint their faces in red and blue stripes, and wear silver rings in their lips and noses. They are good boatmen and fishermen, and are employed by the traders to collect sarsaparilla. They speak the *Pana* language. They have very rough skins, owing to the continual attacks of mosquitoes. They are marked on Fritz's map (1707) on the east side of the Ucayali. They are now chiefly settled round Sarayacu. *Mercurio Peruano ; Girbal MS. ; Fritz's map ; Velasco ; Hervas*, i, p. 262 ; *Smyth*, p. 235 ; *Castelnau ; Herndon*, p. 202 ; *Larrabure*.

Conomomas.—A tribe of the River Jutay. *Acuña*, p. 99 ; *Spix und Martius*, iii, p. 1185.

Conroyes.—(*Prince*.) Head waters of the Yacaré.

Copatasas.—A branch of the Jeveros. *Villavicencio.*

Corabecas.—(*Prince*.)

Coretus.—See *Curetus*.

Coriciaras.—See *Moxos*.

Corinas.—(*Prince*.)

Corocoros.—A tribe of the River Uaupés. *Wallace.*

Coronas.—A tribe of the River Teffé. *Ribeiro.*

Coronados.—A tribe of the River Pastasa. *Rodriguez.*

Cortys.—A small tribe between the Tocantins and Araguay, divided into ten branch tribes. *Martius.*

Cotos.—See *Orejones*.

Cotocarianas.—See *Carabuyanas*.

Coturias.—See *Cutrias*.

Couas.—See *Uaupés*.

Covarecas.—(Prince.)

Crans.—A tribe on both sides of the Tocantins, in the North of Goyaz. A warlike people.

Cucamas.—See *Cocomas*.

Cuchenos.—(Prince.)

Cuchiguaras.—A tribe of the River Purus. There is a tribe of the same name on the Tocantins. *Acuña*, p. 107; *Spix und Martius*, iii, p. 75.

Cucicas.—See *Chiquitos*.

Cucucares.—See *Chiquitos*.

Cuhibas.—(Prince.)

Cuinuas.—A branch of the *Camavos*. *Velasco*.

Cuives.—A branch of the *Roamaynas*.

Cuiyacus.—A tribe of the River Aguarico. *Villavicencio's map*.

Cuiyayos.—A tribe between the Aguarico and Putumayu. *Villavicencio's map*.

Culinas.—A tribe of the Yavari. *Martius* same as *Collinas*.

Cumacumans.—A tribe of the River Japura. *Penna*.

Cumaruruayans.—See *Carabuyanas*.

Cumayaris.—A tribe of the River Purus. *Acuña*, p. 107; *Spix und Martius*, iii, p. 1175.

Cumbasinos.—A tribe of the Santa Cataline in the Pampa del Sacramento. *Smyth*, p. 204.

Cumuramas.—A tribe of the River Solimoens. *Penna*.

Cunas.—A tribe of the Putumayu. *Acuña*, p. 99.

Cunichanas.—(Prince.)

Cunipusanas.—A branch of the *Barrés* inhabiting the head of the Pacimoni River. *Spruce*.

Cunjies.—A branch of the *Avijiras*. *Velasco*.

Cunuris.—A tribe at the mouth of the river up which the Amazons are said to live, called the Nhamunda. *Acuña*, p. 122; *Penna*.

Cunzas.—(Prince.)

Cupenos.—(Prince.)

Cupiccs.—(Prince.)

Cupinharos or "Ant Indians." A branch of the great *Tupi* nation near the mouth of the Amazons. *Martius*.

Curacanecas.—(Prince.)

Curales.—(Prince.)

Curanas.—A tribe of the Ucayali, said to be a branch of the *Campas*. *Velasco*.

Curanaris.—A tribe of the River Madeira. *Acuña*, p. 117.

Curanis.—A tribe of the River Japura. *Penna*.

Curarajes.—A branch of the *Zaparos*. *Villavicencio*; *Tyler*.

Curassi-Tapuujas.—See *Juris*.

Curetus.—A tribe inhabiting the country between the Rivers Japura and Uaupé

- They are short but very strong, wear their hair long and paint their bodies. The men wear a girdle of woollen thread, but the women go entirely naked. Their houses are circular with walls of thatch and high conical roofs. They reside in small villages governed by a chief, and are long-lived and peaceable. They cultivate maize and manioc. They have no idea of a Supreme Being. Their language is very guttural and difficult to understand, as they keep their teeth close together when speaking. Latham gives twenty-two *Curetu* words. There is a tribe of the same name on the Tefé River. *Spix und Martius*, iii, p. 1222; *Ribeiro*; *Wallace*; *Latham*.
- Curiares*.—A tribe between the Xingu and Tocantins. *Martius*.
- Curiates*.—A tribe marked on Fritz's map (1707) between the Rivers Madeira and Tapajos.
- Curiciraris*.—Formerly on the Jumá. *Edwards*, p. 17.
- Curigueros*.—A race of giants on the Purus. *Acuña*, p. 107.
- Curis*.—A tribe of the River Amazon. *Acuña*, p. 100.
- Curinas*.—A tribe living south of the *Omaguas*. *Acuña*, p. 96; *Spix und Martius*, iii, p. 1187; *Penna*.
- Curiveas*.—A tribe said to have been subject to the Gran Paytiti. *Rodriguez*.
- Curuamas*.—A tribe of the River Yavari. *Martius*.
- Curuanaris*.—See *Carabuyanas*.
- Curuaxis*.—A tribe of the Rio Negro, now nearly if not quite extinct. *Martius*; *Penna*.
- Curucurus*.—A tribe of the Purus. *Acuña*, p. 107.
- Curuminacas*.—(*Prince*.)
- Curupatabas*.—A tribe of the Rio Negro. *Acuña*, p. 110.
- Curuziraris*.—A very populous tribe on the south side of the Amazons twenty-eight leagues below the mouth of the Jurua. *Acuña*, p. 101.
- Cusabatayes*.—A branch of the *Manamabobos*. *Velasco*.
- Cusineris*.—(*Prince*.)
- Custiniabas*.—A branch of the *Pirros*. *Velasco*.
- Cutinanos*.—A branch of the *Jeveros*. Father Cuvia preached to them in 1646. *Velasco*.
- Cutrias* or *Coturias*.—A tribe between the Rivers Juina and San Simao. *Martius*.
- Cuxiuaras*.—A tribe of the River Purus. *Penna*.
- Cuyubabas*.—(*Prince*.)
- Cuyzaras*.—A branch of the *Moxos*. *Hervas*; *Prince*.
- Cuzares*.—A tribe between the Xingu and Tocantins. *Martius*.
- Damacuris*.—A tribe of the River Canaburi. *Penna*.
- Desannas*.—A branch of the Uaupés, between the Rivers Uaupé and Guaviare. *Wallace*; *Martius*; *Penna*.
- Ecorbecas*.—(*Prince*.)
- Emuirises*.—(*Prince*.)
- Enaguares*.—See *Guagnas*.
- Encabellados*.—A tribe of the River Napo, so called by Father Rafael Ferrer in

1600, from their long hair. They were preached to from 1727 to 1768. They are marked on Fritz's map (1707) between the Rivers Napo and Putumayu, Villavicencio places them on the lower part of the Aguarico. They are much reduced in number, and live chiefly on fish and the manati. *Acuña*, pp. 92-94; *Fritz's map*; *Velasco*; *Villavicencio*; *Hervas*, i, p. 262.

Engaibas.—A tribe of the River Pacaxa. *Acuña*, p. 130.

Enjejes.—A branch of the *Itucales*. *Velasco*.

Ercpunacas.—A tribe of the River Madeira. *Acuña*, p. 117.

Erirumas.—A branch of the *Moxos*. *Hervas*; *Prince*.

Eriteynes.—A branch of the *Iquitos*. *Velasco*.

Fuscavinas.—A branch of the *Andoas*. *Velasco*.

Fununhías.—A branch of the *Huitotos*. *Robuchon*.

Gacs or *Gaycs*.—A tribe of the Marañon with a language allied to that of the *Jeveros*.

In 1707 they killed Father Durango. They are placed, on Fritz's map, on the upper waters of the Tigre and Pastasa. Spruce says that this is the ancient name of the *Simigaes*. *Fritz's map*; *Rodriguez*; *Velasco*; *Spruce's notes*.

Gcs.—A great tribe between the Tocantins and Araguaya. *Martius*.

Gellas.—(*Prince*.)

Gemias.—A tribe on the River Jutay. *Martius*.

Gentios.—The best canoemen on the Amazons. *Edwards*, p. 169.

Gepuas.—A tribe on the River Japura. *Penna*.

Ginoris.—A branch of the *Simigaes*. *Velasco*.

Gis.—See *Uaupés*.

Gívaros.—Same as *Jíbaros*.

Goahivas.—A fast diminishing tribe in the plains of Casamare: once on the Napo and Putumayo. Neighbours of the *Achaguas*, *Airicos*, *Tunelos*, and *Chiriconas*. *Bartolomé*.

Goyuzes.—A tribe of Villa Boa in the province of Goyaz, now extinct. *Martius*.

Guacanaguas.—*Prince*, p. 80; *Cherrin*, i, p. 51. Between the Madidi and Madre de Dios.

Guacaras.—A tribe living next to the country of the Amazons with whom they had intercourse. On the River Nhamundá. *Acuña*, p. 122.

Guachis.—A tribe of the Gran Chacu. *Lozano*.

Guagnas or *Enaguares*.—A tribe on the banks of the River Japura. They are cannibals and dry the flesh of their prisoners. They compress the waist from infancy, and use a kind of harpoon. *Mem. de los Vireyes*, vi, p. 141.

Guajayos.—A tribe of the Marañon preached to between 1727 and 1768. *Velasco*.

Guajejus.—A tribe on the Corumbiára. *Martius*.

Gualaquijas.—A branch of the *Jeveros*. *Velasco*.

Guamalcas.—See *Chunipies*.

Guanas.—A tribe of the Gran Chacu. *Lozano*.

Guanamas.—A tribe of the Rio Negro. *Acuña*, p. 110.

Guanans.—"Men of the woods." Between the Paraguay and the Sierra de Chainez.

Martius.

Guanapus.—A tribe on the river of the same name, perhaps the parent stem of the

Bus. *Martius*.

Guanapuris.—A branch of the *Araganatubas*. *Acuña*, p. 105.

Guanarus.—A tribe of the River Jutay, marked on Fritz's map (1707), between the Rivers Jurua and Teffe. *Acuña*, p. 99 ; *Fritz's map*.

Guandios.—(*Prince*.)

Guanibis.—A tribe of the *Araganatubas*. *Acuña*, p. 105.

Guapindages.—A tribe between the Rivers Araguay and Xingu. *Martius*.

Guaques.—A tribe in Mocoa, on the Rivers Caqueta and Putumayu. *Trübner's Bib. Glott.*, p. 75.

Guaquiaris.—A tribe of the River Purus. *Acuña*, p. 107.

Guaraicus.—See *Uaraycus*. A tribe of the Putumayu. *Acuña*, p. 99.

Guaranacuazanas.—A tribe between the Rio Negro and Orinoco. *Acuña*, p. 110.

Guaranguacas.—A tribe of the Amazon below the mouth of the Madeira. *Acuña*, p. 117.

Guarani Stock.—See *Tupi*.

Guarayos.—A tribe on the head waters of the Mamoré and its tributaries, and on some of the tributaries of the Beni. They navigate the Madidi and the Madre de Dios. The Indians of this tribe, and those of the *Sirionos* are believed to be descended from the Spaniards who, in the seventeenth century, went into the forest in search of the Gran Paytiti. They are bearded and florid, but also have some characteristics of their maternal ancestry. They are said to be kind and hospitable ; but Armentia describes the *Guarayos* as fierce and barbarous, and says that they cultivate maize and plantains. Little is known about them. Hervas says that they are met with between the *Moxos* and *Chiquitos*. *Hervas* ; *Dalence* ; *Armentia* ; *Prince* ; *Cherrin*, i, pp. 51 and 80 ; *Fawcett*.

Guaranacaguas.—A tribe of the Rio Negro. *Acuña*, p. 110.

Guaribas or "Ape Indians." A branch of the Uaupés. *Martius*.

Guariquenas.—A branch of the *Barrés*. *Spruce's notes*.

Guasitayas.—A tribe of the Marañon preached to between 1727 and 1768. *Velasco*.

Guatinumas.—A tribe of the River Madeira. *Acuña*, p. 110.

Guatos.—A tribe near the sources of the Araguay with very white skins. *Martius*.

Guatosos.—(*Prince*, p. 80.)

Guayabas.—A tribe on the north side of the Amazons. *Acuña*, p. 100.

Guayacaris.—A tribe of the *Araganatuba*. *Acuña*, p. 105.

Guayanas or *Guayanazes*.—A tribe on the main land opposite the island of Marajo. *Martius*.

Guayazis.—A tribe of dwarfs, of whom *Acuña* heard from the *Tupinambas*. *Acuña*, p. 119.

Guaycurus.—A tribe of the Gran Chacu between the Rivers Pilcomayu and

Yaveviri, and on the eastern side of the Paraguay. In the wet season their country is so marshy and full of swamp that they cannot walk, and in the dry season it is so parched up that there is great scarcity of water. It was found almost impossible to penetrate into it; and the *Guaycurus* remained independent. The men go quite naked, but the women wear a short petticoat. Lozano gives a long and interesting account of the *Guaycurus*.

Lozano ; Herras ; Martius.

Guazagus.—A branch of the *Andoas*. *Velasco.*

Guencoyas.—A tribe of the Marañon preached to between 1727 and 1768. *Velasco.*

Guercas.—A tribe already extinct in Velasco's time. *Velasco.*

Guimarás.—A tribe of the River Maraca. *Penna.*

Guipis.—(*Prince.*)

Haquetis.—A branch of the *Manumabobos*. *Velasco.*

Harytrahes.—A tribe near the sources of the River Gurupatuba. *Martius.*

Haynanas.—A branch of the *Huitotos*. *Hardenburg.*

Heracopoconos.—See *Moxos*. (*Prince.*)

Hiabaanas.—A tribe of the River Inabú. *Penna.*

Hibitos.—See *Jibitos*.

Himuetacas.—A branch of the *Iquitos*.

Hinnamonas.—(*Prince.*)

Hipurinas.—A cannibal tribe of the River Purus. The most numerous, warlike, and formidable on that river, between the mouths of the Sepatynim and Hyuacu. Their houses are very long, low, and narrow. The side wall and roofs are one. The poles, being fixed in the ground, converge upwards from opposite sides, and are then bent together, so as to meet and form a pointed arch for the cross section of the house. The ends are closed so as to leave but small doorways. They use bark canoes, only large enough to hold five or six persons. The *Hipurinas* delight in war, using the *tocoaro* or bamboo-headed arrow, and *curabi* or unfeathered arrow with poisoned head, notched and half cut through, so as to break off in the body. Salt is said to be an antidote to their poison, which is made from the sap of the *assaca*. They are well mannered and clean, and have a certain air of self-respect about them. They only wear a *tonga* or clout. They believe in a god called *Guintinri*. Chandless gives sixteen words of the *Hipurina* language, and the Anthropological Institute (vocab. fund) published a grammar and more complete vocabulary by the Rev. J. C. R. Polak in 1894. The *Hipurinas* are met with for about 400 miles of the upper course of the Purus, and they extend eight or ten days' journey up the Aquiry. They may perhaps number 2,000 or 3,000 souls. *Chandless ; Polak.*

Hinhuuas.—A tribe of the Japura. *Penna.*

Homapalcas.—(*Prince.*)

Houburayos.—A wandering tribe of savages on the east side of the Mamoré as far as the mouth of the Itenez. *Heath.*

Huachipayris.—See *Chunchos*.

Huahuatales.—A tribe marked on Fritz's map (1707) between the Rivers Jurua and Teffé. *Fritz's map*.

Huambisas.—A fierce tribe of the Upper Marañon and Santiago rivers. They are a branch of the *Jeveros*. In 1841 they drove all the civilised Indians from the upper missions. In 1843 they killed all the inhabitants of a village called Santa Teresa, between the mouths of the Santiago and Morona. They encroach more and more on the few settled villages which remain on the Upper Marañon. They are chiefly met with on the Morona, and on the northern bank of the Marañon. They are fair skinned and bearded, being descended from 7,000 Spanish women captured by the Indians at the sack of Sevilla del Oro in 1599. *Ruimondi*; *Heraldo de Lima*, 15th September, 1855; *Spruce's notes*; *Sotomayor*; *Larrabure*, xv, p. 416.

Huanapoanas.—(*Prince*.)

Huapacas.—(*Prince*.)

Huasimoas.—A branch of the *Iquitos del Nanay*, preached to between 1727 and 1768. *Velasco*.

Huaycurus.—(*Prince*.)

Huirunas.—A tribe of the Araganatuba. *Acuña*, p. 105.

Huitotos.—A hostile tribe on the Putunayu, numbering 30,000. A well-formed race. stout and strong, but short, and the limbs not well developed. Hair long and abundant. A protruding abdomen very rare. The women with graceful figures, some beautiful. Houses large and circular, 70 feet in diameter, roofs of the leaves of the vegetable ivory tree, frame of chonta palms, 70 families in one house. They use the blow-cane and a light spear. They are decreasing, owing to enforced labour by rubber collectors.

Hardenburg; *Larrabure*, xv, pp. 416, 640; *Prince*, p. 73; *Robuchon*.

Humuranas.—A branch of the *Maynas* preached to between 1727 and 1768. *Velasco*.

Ibanomas.—A branch of the *Jeveros*, marked on Fritz's map (1707) between the Rivers Teffé and Purus. *Fritz's map*; *Velasco*.

Ibirajares.—See *Ymarayares*.

Iças.—A tribe on the river of the same name. *Martius*.

Icahuates.—A tribe of the Marañon preached to between 1683 and 1727. *Velasco*.

Igara-uaras (or "Canoe men").—Several branches of the *Tupí* nation at the mouth of the Amazon are so-called. *Martius*.

Inoris.—(*Prince*.)

Iurus.—A branch of the *Jeveros*. *Velasco*.

Imaschahuas.—A branch of the *Maynas*. *Velasco*.

Imonas.—See *Chiquitos*.

Inambus (or "Bird Indians").—A branch of the *Mauches*. *Martius*.

Inaparis.—(*Prince*.)

Incuris.—A branch of the *Simigæs*. *Velasco*.

Inganas.—A tribe of the Mocoa territory. *Trubner's Bib. Glott.*, p. 86.

Iniavis.—(Prince.)

Injiénjes.—(Prince.)

Inquis.—(Prince.)

Inuacas.—A branch of the *Camavos*. *Velasco*.

Ipapuisas.—A branch of the *Maynas* identical with the *Ipapityas* and *Coronados*.
Velasco.

Ipecas.—See *Taupés*.

Ipilos.—A branch of the *Piros*. *Velasco*.

Ipurinas.—See *Hipurinas*.

Iquitos.—An extensive tribe divided into numerous branches, some living on the River Tigre, others on the Nanay. The latter is a stream which flows into the Marañon, near Omaguas, and the village of Iquitos is at its mouth. The *Iquitos* were preached to between 1727 and 1768. Villavicencio places them on the east side of the lower course of the Napo. They are very dexterous in the use of the lance. They brew better *chicha* or fermented liquor than any of the neighbouring tribes, flavouring it with the young shoots of some plant which have the effects of an opiate. They worship figures carved in the shape of birds and beasts. Latham gives twelve *Iquito* words. *Mem. de los Vireyes*, vi, p. 143; *Velasco*; *Villavicencio*; *Latham*.

Irijus.—A tribe of the River Purus. *Martius*; *Penna*.

Isannas, or *Papunauas*.—A tribe of the River Isanna, a tributary of the Rio Negro. They cut their hair, and the women wear a cloth instead of being naked, and adorn themselves with bracelets. Their huts are collected together in little villages. They bury their dead inside the huts, and mourn for them a long time, but make no feast on the occasion. *Wallace*, p. 507.

Isiamas.—(Prince.)

Isocenes.—(Prince.)

Ita-Tapuujas.—"Stone Indians," so called from a stone worn in the upper lip. A tribe of the Capana, and other tributaries of the Madeira. *Martius*.

Itencs.—(Prince.)

Itapes.—(Prince.)

Itonomas.—A branch of the *Moxos* settled in the mission of San José de Guacaraje.
Hervas; *Keller*; *Prince*.

Itremajoris.—A branch of the *Simigacs*. *Velasco*.

Itucals.—A tribe of the upper Marañon. *Anónimo*, p. 367; *Velasco*.

Izas.—A branch of the *Itucals*; extinct. *Velasco*.

Izibas.—A branch of the *Itucals*. *Velasco*.

Izuhals.—A branch of the *Urarinas*. *Velasco*.

Jacamis, or *Jacare-Tapuujas*.—"Cayman Indians." A tribe near the junction of the Beni and Mamoré, few in number and scattered over the country. Quite savages. Those who were on the lower Madeira have been exterminated by the *Mundrucus*. *Martius*; *Bates*; *Gibbon*.

Jaconaigas.—A branch of the *Abipones*.

Jacundas.—A tribe between the river of that name and the Tocantins. *Martius* ; *Penna*.

Jajunumas.—See *Jumanas*.

Jumalopas.—See *Jumanas*.

Jamamaris, or *Jamamadys*.—A tribe on the west side of the Purus, but living some distance inland. They are, indeed, exclusively a land tribe. There is very little information concerning them, except that in their customs and appearance they resemble the *Cataxis*. *Wallace*, p. 511 ; *Chandless*.

Jamanucas.—(*Prince*).

Janumas.—A tribe of the River Teffé. *Ribeiro* ; *Penna*.

Japuas.—A tribe of the Marañon preached to between 1727 and 1768. *Velasco*.

Jauanas, or *Javnas*.—A tribe of the River Teffé. *Ribeiro* ; *Martius*.

Javaretes.—"Ounce Indians." See *Uaupés* and *Uainumas*.

Javacs, or *Javahes*.—A tribe of the River Araguay ; now extinct. *Martius*.

Jurqins.—See *Yavains*.

Javipujas.—A tribe between the Rivers Xingu and Tocantins. *Martius*.

Jawabus.—A branch of the *Panos*. *Velasco*.

Jeceros, *Jeberos*, *Jibaros*, *Jivaras*, or *Gicaros*.—A tribe of the River Marañon, above the Pongo de Manseriche, the first fruits of the Jesuit Missions. *Velasco*, who divides them into three branches, says that they are the most faithful, noble, and amiable of all the tribes ; brave and with military talent. *Villavicencio* divides them into three branches all speaking the same language, which is sonorous, clear, and harmonious, energetic, and easy to learn. They have different names for every plant and every insect. They only have native numerals up to five, using Quichua for higher numbers. There are nine dialects. The *Jeceros* wander in the forests between the Rivers Chinchipe and Pastasa, and on both sides of the Marañon. *Simson* places them in the country from the upper Pastasa to the Santiago. The branch tribes are constantly at war with each other, but they unite against a common enemy. On the conquest of Peru the Spaniards reduced these Indians, and founded colonies in their country ; but in 1599 a general insurrection of the *Jeceros* destroyed all these settlements in one day. The *Jeceros* have muscular bodies, small and very animated black eyes, aquiline noses, and thin lips. Many have beards and fair complexions, and it is said that this arises from the number of Spanish women captured by them in 1599. The *Jeceros* love liberty, and can tolerate no yoke. They have fixed homes, cultivate yucas, maize, frijoles, and plantains, and their women wear cotton cloths. They live in well-built huts, and sleep in standing bed-places instead of hammocks. They are very jealous of their women, and keep them apart. Their lances are made of *chonta* palm, the head being triangular, 30 or 50 inches long, and 10 to 15 inches broad. They all take a strong emetic every morning (an infusion of the leaves of the *guayusa*) for the sake of getting rid of all undigested food,

and being ready for the chase on an empty stomach. At each village there is a great drum called *tunduli* to call the warriors to arms, and it is repeated from village to village as a signal. Their hair hangs over their shoulders, and they wear a helmet of bright feathers. When they are engaged in war their faces and bodies are painted, but during peace they wear breeches down to the knees, and a shirt without sleeves. Some curious dried human heads, supposed to have been venerated as idols, have been found among the *Jeveros* of Macas. There is an account of them in the Ethnological Society's Transactions for 1862, by W. Bollaert, and there are specimens in several museums in Europe. The *Jeveros* who live among the Spaniards, in the upper angle between the Huallaga and the Marañon, talk Quichua, and many of them serve in the houses in Moyobamba, and in the farms in the neighbourhood. They are the best porters in the province. *Fritz's map*; *Velasco*; *Villacicencio*; *Raimondi*; *Hervas*, i, p. 274; *Simson*; *Spruce's notes*.

Jibaros.—See *Jeveros*.

Jibitos.—A tribe first met with by the Franciscans in 1676, in the forest near the Huallaga, on the eastern borders of the Peruvian province of Caxamarquilla. They were converted and settled in villages on the western bank of the Huallaga. Their women wear a cotton dress confined round the waist by a girdle. They bathe in the river, for their health, very early in the morning. They are only distinguished from the *Cholones* by their dialect, but they are less civilised. They paint their faces, not with any fixed pattern, but each man according to his fancy using the blue of *huitoc* (*Genipa oblongifolia* R.P.) and the red of *achiote* (*Bixa Orellana* Lin.). The *Jibitos* are met with at Tocache and Lamesillo on the Huallaga. *Herndon*, p. 150; *Raimondi*; *Larrahure*, xv, p. 416.

Jinoris.—(*Prince*.)

Jocacuramas.—See *Jumanas*.

Juanas.—A tribe of the River Pacaxa. *Acuna*, p. 130.

Jubiris or *Juberys*.—A tribe on the Purus. There is little known about them. Their bodies are spotted and mottled like those of the Purupurus. *Wallace*, p. 516; *Chandless*.

Jubereccas.—(*Prince*.)

Jumanas.—See *Ticunas*. A tribe of the Iça and Marañon. Martius gives nine branches of the *Jumanas*: *Caruanas*, *Jajunumas*, *Jamolapas*, *Jocacuramas*, *Lamaramas*, *Maliaumas*, *Picuumas*, *Urizsammas*, *Varaumas*.

Jumas.—A tribe of the River Coari, and near the sources of the Canuma. They were exterminated by the *Mundurucos*. *Southey's Brazil*; *Martius*; *Bates*, ii, p. 131; *Penna*.

Juris.—A tribe of the River Amazons between the Iça and Japura. Many of them have also settled on the Rio Negro. In 1775 there was a settlement of *Juris*

on the Japura, ruled by a chief called *Machiparo* or *Macupari*. Their huts are formed of a circle of poles with others woven in, and a roof of palm leaves in the shape of a dome. The *Juris* are nearly related to the *Passes*, and in former time they were undoubtedly one tribe. Their language, manners and customs are the same, but the *Juris* have broader features and chests. Dr. Latham gives twenty-two *Juri* words. In former times the *Juris* were the most powerful tribe between the Iça and Japura, but in 1820 their whole number did not exceed 2,000. Martius gives ten divisions of the tribe: *Juri-coma Tapuijas*, *Carao Tapuijas* (Cacao Indians), *Moira Tapuijas* (Wood Indians), *Assai Tapuijas* (Palm Indians), *Curassi Tapuijas* (Sun Indians), *Oira acu Tapuijas* (Great bird Indians), *Tucano Tapuijas* (Toucan Indians), *Urbi Tapuijas* (Blow pipe Indians), *Urbytu Tapuiju* (Wind Indians); *Taboca Tapuijas*.

The *Jurus* tattoo a circle round the mouth, and hence they are called *Juripixunas* or black *Juris*. They are good servants for canoe or agricultural work, and are the most skilful of all in the use of the *gravatana* or blow-cane. The hair of the *Juris* is curled so closely as to resemble the African woolly-head. The women have both cheeks tattooed. The *Juris* were nearly extinct fifty years ago, a few families still lingering on the retired banks of the Teffé. They inter-married very much with relations, and Martius gives this as the cause of their degeneracy. *Martius*, iii, p. 1235; *Von Spix*, iii, p. 1184; *Southey's Brazil*, iii, p. 721; *Smyth*, p. 278; *Bates*, ii, p. 194; *Simson*, p. 574.

Juri-coma Tapuijas.—See *Juris*.

Juruenas.—A tribe on the river of the same name. *Martius*.

Jurunas.—"Black men." A tribe on the River Xingu, visited by Prince Adalbert of Prussia. A branch of the Tupis. *Martius*.

Juruparis.—"Devil Indians." See *Uaupés*.

Jutipos.—A tribe preached to between 1683 and 1727. Velasco says that the *Manoas*, *Panos*, and *Peludos* are all branches of the *Jutipos*; but this must be a mistake. *Velasco*.

Kinenes.—A branch of the *Huitotos*. *Robuchon*.

Lamaramas.—See *Jurunas*.

Lambys.—A tribe of the River San Simao.

Lamistas or *Motilonas*.—A tribe of the Huallaga civilised by the Franciscans in 1676. They are settled at Lamas, Moyobamba, and Tarapoto. They are industrious and are employed chiefly in agriculture and in the preparation of cotton. They also inhabit Chasuta, but there they have retained, to a great extent, the habits of wild hunting Indians. They are of a mild disposition, and have polite, friendly manners. *Pöeppig, Reise*.

Layamas.—(*Princr.*)

Lecos or *Mositenes*.—A tribe of the Tipuani, a tributary of the Beni, settled in the mission villages of Mapuri and Guanay, where they were half civilised.

They have agreeable expressions, high foreheads, comparatively small mouths and horizontal eyes. The Guanay Mission was founded in 1802. Padre Herrera printed a vocabulary of the *Lero* or *Mosetene* language at Rome in 1834 (12m. pp. 20). *Weddell*, p. 453; *Heath*; *Prince*; *Chervin*, i, p. 51.

Llaguas.—A tribe of the River Pebas. They go naked and are dexterous in hunting and fishing. *Mem. de los Virreyes*, vi, p. 138; *Prince*.

Llameos.—A tribe inhabiting San Regis on the Marañon. *Raimondi*.

Lliquinos.—A tribe on the head waters of the Curaray. *Villavicencio's map*.

Logroños.—A tribe on the western side of the Morona. *Villavicencio's map*.

Incumbias.—(*Prince*.)

Lules.—A tribe of the Gran Chacu, first visited by San Francisco Solano, and afterwards by Father Alonso de Barzana. Their language is very deficient in words to express abstract ideas, and they are described as a very savage race. Father Machoni, and other Jesuits, laboured amongst the *Lules* between 1711 and 1729. *Herrera*, i, p. 165; *Lozano*, pp. 94 and 380.

Lunas.—(*Prince*.) On the Japura.

Mabius.—A tribe of the River Japura. *Penna*.

Maraguas.—A tribe of the Araganatuba. *Acuña*, p. 105.

Macaguajes.—On the Putumayu. See *Piojes*. *Simson*.

Macas.—A branch of the *Jerreros*.

Macarina.—(*Prince*.)

Macavinas.—A branch of the *Audoas*. *Velasco*.

Machais.—*Chervin*, i, p. 51.

Machigangas.—See *Campas*.

Maonis.—A Brazilian tribe nearly exterminated by the *Botocudos*.

Macucuenas.—A tribe of the River *Vaupés*. *Penna*.

Macus.—One of the lowest and most uncivilised tribes of the Amazonian basin, inhabiting forests near the Rio Negro. They have no houses and no clothing. They stitch up a few leaves at night to serve as a shelter if it rains. They make a most deadly kind of poison to anoint their arrows. They eat all kinds of birds and fish roasted. They often attack the houses of other Indians and murder all the inmates. They have wavy and almost curly hair. They are one of the few wandering tribes with no fixed residence, and are met with through nearly the whole length of the Rio Negro, but principally to the westward of it. They must not be confounded with the *Macos* of the Orinoco. *Wallace*, p. 508; *Spruce's notes*.

Macunas.—A tribe of the Araganatuba and Rio Negro. *Acuña*; *Wallace*.

Macunis.—A small tribe of the Rio Branco. *Martius*.

Macaxis.—A tribe of the Rivers Mahu, Pirarara and Saraura. *Penna*.

Maduacac.—A tribe of the River Canuburi. *Penna*.

Mugienes.—(*Prince*.)

Mainas.—See *Roamaynas*.

- Mainaguas*.—A tribe on the Purus. *Larrabure*, xv, 418.
- Maisames*.—A tribe between the Rivers Nanay and Napo. *Villavicencio's map*.
- Majamoricás*.—(Prince.)
- Majironas*.—See *Majorunas*.
- Malbales*.—Same as *Mataguayos*.
- Malinumas*.—See *Jumanas*.
- Mamacicas*.—A branch of the *Chiquitos*.
- Mamayamazes*.—A tribe of the island of Marajo. *Martius*.
- Mambares*.—A tribe of *Tupi* origin, mixed up with the *Cubiris*. *Martius*.
- Mambriaras*.—A tribe of the Tapajos. *Martius*.
- Mamelucos*.—The half-caste offspring of whites and Indians are so called in the Brazilian provinces of the Amazons. *Bates*.
- Mamengas*.—A tribe of the Rivers Japura and Uaupés. *Penna*.
- Manacurus*.—A tribe of the Rio Negro. *Acuña*, p. 40.
- Managus*.—A tribe employed in procuring gold near the Amazons. *Acuña*, p. 103.
- Manahuas*.—A tribe of the Ucayali, living between that river and the Yavari, mentioned by Father Girbal as being met with near the *Capanahuas*. *Girbal MS.*; *Mercurio Peruano*, No. 381.
- Manamabobos*.—A tribe of the Ucayali visited by Father Lucero in 1681. They are marked on Fritz's map (1707) on the east side of that river. *Fritz's map*; *Rodriguez*; *Velasco*; *Mercurio Peruano*.
- Manamabuas*.—A branch of the *Manamabobos*. They were preached to between 1683 and 1727. *Velasco*.
- Manaos*.—A tribe of the River Teffé, also met with on the banks of the Rio Negro. The whole tribe is now civilised, and they were among the first settlers at Barra. Once the most powerful nation on the Rio Negro. *Spruce's notes*.
- Manatizabas*.—A branch of the Piros. *Velasco*.
- Mandauacas*.—A branch of the *Burrés*.
- Maneteneris*.—A tribe far up the Purus, and between that river and the Jurua. They have communication with the Ucayali. They manufacture cotton cloth, and have iron axes and fish hooks. The men wear long ponchos, the women are clothed in sacks open at the bottom. The women seem to be on a footing of perfect equality with the men, often scolding them, and interfering in their trade. The *Maneteneris* are great thieves, and are essentially a water-side tribe, always on the move up or down the river. Their canoes are *ubás* of cedar wood, very long and admirably made. Chandless gives sixteen words of their language. *Chandless*.
- Manageronas*.—A tribe of the Japura. *Penna*.
- Manibas*.—A tribe on the River Isanua. *Martius*.
- Manoas*.—See *Conibos*.
- Manosuyu*.—Conquered by the Inca Tupac Yupanqui. *Sarmiento*.
- Manues*.—A branch of the Campos. *Velasco*.

Manyaris.—Also called *Yana Simis*, conquered by the Inca Tupac Yupanqui. Friendly Indians east of Cuzco, and also north of Vilcapampa. *Surmiento*, 143; *Ocampo*, 234.

Maparinas.—A tribe of the Upper Marañon which joined the Cocomas in the rebellion against the Missionaries in 1664. *Rodríguez*; *Velasco*.

Mapiarus.—See *Puinaus*.

Maques.—(*Prince*.)

Maracanos.—(*Prince*.) A tribe of the Upper Marañon. *Larrabure*.

Maraguas.—A tribe of the River Amazon below the mouth of the Madeira. *Acuña*, p. 117.

Marapitanas.—A tribe on the Upper Rio Negro, towards the Cassiquiari. *Martius*; *Penna*.

Marauas.—A tribe of the Lower Jurua. *Martius*; *Bates*, ii, p. 379.

Maraymumes.—A tribe of the Araganatuba. *Acuña*, p. 105.

Marcanis.—A tribe in the basin of the Beni. *Armentia*.

Marianas or *Maranhás*.—A tribe of the River Jutay. They wear small pieces of wood in their ears and lips, but are not tattooed. The boring of the lips of a child is celebrated by a feast. When a boy is twelve years old the father cuts four lines near his mouth, and he must then fast for five days. The elder lads scourge themselves with a small girdle, which operation is considered as proving their manhood. They are also met with on the upper course of the Putumayu, across to the Japura. *Acuña*, p. 99; *Spix und Martius*, iii, p. 1185; *Bates*, ii, p. 377.

Marianas.—A tribe between the Japura and Rio Negro. *Martius*.

Marietes.—A tribe on the upper course of the Iça. *Bates*, ii, p. 377.

Mariguyanás.—See *Carabuyanás*.

Mariruas.—A tribe of the Araganatuba. *Acuña*, p. 105.

Marnuacas.—A tribe of the River Japura. *Penna*.

Maropas.—A tribe on the River Beni, inhabiting Reyes, also in the *Moxos* country. Dr. Heath made a vocabulary of their language. *Heath*; *Prince*; *Armentia*; *Chervin*, i, p. 50.

Masacas.—A branch of the *Barrés*. *Spruce*.

Masamaes.—A branch of the *Yameos* preached to between 1727 and 1768. *Velasco*.

Mascos.—In the ravine of the Mishayna River, tributary of the Vilcamayu. Twenty families from Sta. Rosa. *Sotomayor*.

Masipius.—A tribe of the Araganatuba. *Acuña*, p. 105.

Masucaruanas.—See *Carabuyanás*.

Matucus.—See *Mataguayos*.

Matugenes.—A branch of the *Zuparos*.

Mataguayos.—A tribe of the Gran Chacu, belonging to the Pampa or Patagonian stock. Their women are made to work like slaves. They occupy the country on the west bank of the river Bermejo for a length of 82 leagues.

Their chief food is fish, which they catch with nets and with arrows. Their dresses are made of the skins of animals. Pelleschi calls them *Mattaros*. He minutely describes their physical characteristics. *Lozano*; *Hervas*, i, p. 164; *Pelleschi*; *Mercurio Peruano*, No. 583; *Prince*; *Chervin*, i, p. 110.

Matchus.—(*Prince*.)

Maturares.—A tribe east of the *Cabiris*. *Martius*.

Maturuas.—A tribe of the River Jutay. *Martius*.

Muuas.—See *Umanas*.

Mauhes.—A branch of the *Mundrucus*, wandering between the Tapajos and Madeira. They intermarry very much amongst relations. *Martius* says they are split up into twelve sub-tribes, namely: *Tatus* (Armadillo Indians), *Tasiuás*, *Jurupari Pereira* (Devil Indians), *Gauribus* (Monkey Indians), *Inambús* (Bird Indians), *Jauaretas* (Ounce Indians), *Mucumis* (Insect Indians), *Xubaras*, *Ui Tapuñjas*, *Saucanes*, *Pira-perciras* (Fish Indians), *Caribunas*. *Martius*, *Bates*, *Chandless*, *H. Smith*.

Mauishis.—A branch of the *Conibos*. *Bates*, ii, p. 379.

Mautas.—A branch of the *Zaparus* between the Nanay and the Napo. *Villariencio's map*; *Tyler*.

Mayacamas.—A branch of the *Moxos*. *Hervas*; *Prince*.

Mayanases.—A tribe on the River Pacaxa. *Acuña*, p. 130.

Mayanos.—(*Prince*.)

Maynas.—A tribe placed between the Pastasa and the Santiago on Fritz's map (1707). But it is a general name for all the tribes of the Upper Marañon, in the extensive Peruvian province of Maynas. In 1814 a census was made of all the mission villages in Maynas, which gave a total of 26,000 souls, Spaniards and converted Indians, but exclusive of independent and savage tribes. In 1862, the population of this province, which included the banks of the Huallaga, Ucayali, and Marañon was estimated at 90,000, of which 45,200 were civilised Indians, 4,000 or 5,000 scattered in boating and hunting expeditions, and the remainder untamed savages. *Paz Soldan*; *Raimondi*; *Hervas*; *Fritz's map*.

Mayorunas or *Barbudos*.—A tribe between the Rivers Marañon, Ucayali, and Yavari. They have thick beards and white skins, more like English than even Spaniards. They wander through the forests hunting, and do not go much to the rivers. They are supposed to be descended from Spanish soldiers of Ursua's expedition, but this is improbable. When the Inca Pachacuti conquered the Chancas, a part of that nation fled to Muyubamba, and the people of the country, flying before the newcomers, settled on the Ucayali and Yavari. This is probably the origin of the *Mayorunas* or *Muyurunas* (men of Muyu). They have a strange and painful way of pulling out their beards. They take two shells, which they use as tweezers and pull out the hairs one by one, making such grimaces that the sight of

it moves to laughter, and at the same time to pity. They are sometimes called *Barbudos* and are very numerous. They are taller than most of the other tribes, and go perfectly naked. They are very warlike and are in amity with no other tribe. They do not use bows and arrows, but only spears, lances, clubs, and *verbatanas* or blow-canes; and the poison they make is esteemed the most powerful of any. They are well formed, the women particularly so in their hands and feet; with rather straight noses and small lips. They cut their hair in a line across the forehead, and let it hang down their backs. Their cleanliness is remarkable. Very little is really known of them. They attack any person who goes into their territory, and boatmen are careful not to encamp on their side of the Ucayali. Castelnau gives twelve *Mayoruna* words. Bates has an interesting account of a *Mayoruna* girl who was captured on the Yavari. *Sarmiento*; *Velasco*; *Rodriguez*; *Castelnau*; *Raimondi*; *Mercurio Peruano*, No. 76; *Smyth*, p. 223; *Herndon*, p. 218; *Bates*, ii, p. 406; *Spruce's notes*.

Mazanes.—A tribe between the Rivers Nanay and Napo. *Villavicencio's map*.

Mendos.—A tribe on the River Uexie. *Martius*.

Mepurys.—A tribe between the Rivers Cunicuriau and Mariá, tributaries of the Rio Negro. *Martius*; *Penna*.

Meques.—A branch of the *Moxos*.

Meriponccas.—(*Prince*.)

Metinas.—A tribe of the River Juara. *Penna*.

Migwianas.—A branch of the *Yamcos*. These were preached to between 1727 and 1768. *Velasco*.

Minicuas.—(*Prince*.)

Miranhas.—A race of cannibals between the Rivers Iça and Japura, in the neighbourhood of the *Juris*, also met with near Ega. Very hostile to strangers. They have a slit cut in the middle of each wing of the nose, in which they wear a large button made of a pearl river shell. Each man carries his little bag of salt when they go to fight, as an antidote against poisoned arms. *Wallace*, p. 510; *Bates*, ii, pp. 197, 377; *Simson*, p. 574; *Chandless*.

Mirayes.—(*Prince*.)

Miritis.—See *Uaupés* and *Uainumás*.

Miretas.—(*Prince*.)

Mixillones.—(*Prince*.)

Moacaranas.—See *Carabuyunas*.

Mobimas.—A tribe on the River Mamoré, probably a branch of the *Moxos*, settled in the mission of Santa Ana. Heath collected a vocabulary of their language and says they are seldom under six feet high. They are fond of agriculture and stock raising. *Heath*; *Keller*.

Mocetenes.—In the basin of the Beni, subdivided into *Chimanis*, *Muchanis*, and *Tucupis*, south-west of the *Yuracares*. *Chervin*, i, p. 50.

Mochonos.—(*Prince*.)

Mochoros.—A branch of the *Pirros*. *Velasco*.

Mocobias or *Mocovics*.—A tribe of the Gran Chacu. They are a savage people allied to the *Tobas*. In 1712, the Spaniards from Tucuman invaded their country. They are insolent and turbulent, very cruel, and given to rapine and robbery. They possess horses. *Hervas*, i, p. 179; *Lozano*; *Pelleschi*, who calls them *Morovitos*.

Moimas.—A civilised tribe of the Mamoré. *Heath*.

Mojeñas.—(*Prince*.)

Momanas.—A tribe of the Solimoens settled at Fonteboa. *Martius*.

Mopecianas.—A branch of the *Moros*.

Mopitirus.—A tribe of the Araganatuba. *Acuña*, p. 105.

Moquiris.—(*Prince*.)

Moronas.—A branch of the *Jeveres*. *Villauricencio*.

Moropas.—A tribe on the River Mamoré, probably a branch of the *Moros*. They are settled at the mission village of San Borgia. *Keller*.

Morotocas.—A branch of the *Chiquitos*. *Prince*.

Moruas.—A tribe of the River Jutay. *Acuña*, p. 99.

Mosetenes.—See *Lecos* (*Prince*.)

Motaquicas.—A branch of the *Chiquitos*.

Motilonas.—The same as the *Lamistas*. A tribe of the River Huallaga. The expedition of Pedro de Ursua started from their country in 1560. *Fray Pedro Simon*, *Nat. Hist.*, vi; *Velasco*.

Mucimos.—A branch of the *Moros*. *Prince*.

Mucos or *Musus*.—A numerous group of tribes on the Rivers Mamoré and Beni. They submitted to the dominion of the Inca Tupac Yupanqui more through persuasion than by force. The Inca sent a colony into *Moxo*. In 1564, Diego Aleman started from La Paz with a few followers, in search of the gold of Moxos, but he was defeated by the natives and taken prisoner. During the inundations of the rivers, the *Moros* live on the rising ground surrounded by the floods. When the dry season arrives, the sun acting on the stagnant waters, generates pestilence. The climate is, therefore, unhealthy. The *Moros* are now quite under the dominion of the Bolivian Government, and their country forms a province of the department of Beni, separated from Brazil by the Rivers Mamoré and Itenez. In 1674, a Jesuit, named Cypriano Baraza entered the country of the *Mucos*, and spent four years with them, collecting them into mission villages. He dressed their wounds, administered medicines to their sick, and taught them agriculture, weaving and carpentry. The first mission village was at Loreto, the second at Trinidad, where Baraza built a handsome brick church. He was killed by the *Baures* in 1702.

The *Mucos* are a grave, sedate, and thoughtful people, and fond of cultivating the soil. They have set aside the bow and arrow, and taken up

the lasso, which they handle well. They are civil, quiet, peaceable, and seldom quarrel among themselves. They number over 30,000 souls, settled in fifteen mission villages:—Trinidad, San Ignacio, San Pedro, Santa Magdalena, Concepcion (*Baures*), San Joaquim (*Baures*), Santa Ana (*Mobimas*), San Borja (*Maropas*), Loreto, San Xavier, San Ramon, San José de Guacaraje, Carmen de Chapacora, Exaltacion (*Cuyubabus*), Reyes. The language is discussed, and a list of words given by Latham. The *Moxos* are subdivided into twenty-six branches, speaking nine or, according to Southey, thirteen languages, besides sundry dialects. The branches are: *Baures*, *Movimos*, *Eritumas*, *Tapacuras*, *Itonamas*, *Cavicionas*, *Bulepas*, *Herecepoconos*, *Rotoronnos*, *Pechuyos*, *Coriciaras*, *Meques*, *Mures*, *Sapis*, *Cayababas*, *Canacures*, *Mayacamas*, *Tibois*, *Nayras*, *Norris*, *Pacaburas*, *Sinabus*, *Cuyzaras*, *Cabinas*, *Pacanaras*, *Ocoronos*. *Garcilasso de la Vega*, i, lib. vii, ii, cap. 14 and 15; *Stocklein*, *Reise Beschreibungen*, No. 112, 62; *Lettres Edifiantes*; *Southey*, vol. iii; *Hervas*, i, p. 247; *Latham*, p. 500; *Martius*; *Prince*; *Keller*; *Gibbon*, p. 235; *Dalencr*; *Chervin*, i, p. 68.

Muchenis.—(*Prince*.) See *Mosetenes*.

Mucnims.—See *Mauhés*.

Mundrucus.—A tribe called by their neighbours *Paiguizé*, “cutters off of heads.”

One of the most powerful tribes of the Amazons and Tapajos, met with also at the mouth of the Abacaxis. In 1788 they entirely vanquished their ancient enemies the *Muras*. The *Mundrucus* form a numerous tribe of from 30,000 to 40,000 souls. Since 1803 they have been at peace with the Brazilians, and portions are now civilised. When a man is hopelessly ill his friends kill him, and children consider it a kindness to kill their parents when they can no longer enjoy hunting, dancing, and feasting. They are very dirty. A broad-chested and muscular people, with broad, strongly developed, good-natured, but rough features. Their glossy black hair is cut close across the forehead, and the whole body is tattooed in small lines. They are very warlike, and are the Spartans among the Indians of North Brazil, as the *Guaycurus* are of the south. The women are very pleasing in their manners, their brightness and vivacity being unconscious and quite distinct from forwardness. The *Mundrucus* are noted for their honesty. There are many *Tupi* words in their language, as well as many traits in their characters which make it likely that they once belonged to that great family of tribes which, being split into hordes some centuries ago, seems to have spread over the whole of Brazil. The *Mundrucu* language, like the *Tupi*, is not harsh, and is pronounced with much modulation. The *Mundrucus* do not believe in immortality. *Southey's Brazil*, iii; *Wallace*, p. 479; *Martius*, iii, p. 1235; *Chandless*, R.G.S.J., 1870; *H. Smith*, pp. 242, 252.

Muniches.—A tribe of the river Huallaga, preached to between 1638 and 1683. *Rodriguez*; *Velasco*; *Prince*; *Hervas*, i, p. 262; *Maw*, p. 141.

Munijoses.—(*Prince*.)

Muparinas.—A tribe supposed to be extinct. *Velasco*.

Muras.—A populous tribe on the Amazons, who were very formidable to the Portuguese at the time of Ribeiro's tour of inspection in 1775, and until they were vanquished by the *Mundurucus*, when they began to settle in the Portuguese villages. They use a bow 6 feet long, arrows and spears, and construct very good canoes. Their houses are grouped together in small villages, and scarcely ever consist of more than a roof supported on poles, without walls. They live on fish, game, and fruit, and do not cultivate anything. They are partly civilised, and are met with at the mouths of the Rio Negro and Madeira. But in the interior and up the River Purus they still live in a perfectly savage state. They are a tall race with beards, and the hair of the head is slightly crisp and wavy. They used to go naked, but now they wear trousers and shirts, and the women have petticoats. Each village has a *Fashauá* or chief, the succession being hereditary, but the chief has little power. The *Muras* trade with the Brazilians in sarsaparilla, turtle oil, and Brazil nuts, in exchange for cotton goods, knives, spear and arrow heads. Bates classes the *Muras* as the lowest and most debased of all the Amazonian tribes. Chandless says they are indolent, drunken, dishonest, and prone to acts of violence. *Southey's Brazil*, iii, p. 723; *Wallace*, pp. 479 and 511; *Bates*, ii, p. 292; *Martius*; *Gibbon*, p. 306; *Edwards*, p. 132; *Chandless*.

Muratos.—A branch of the *Andoas* preached to between 1727 and 1768. Sixty years ago they were very troublesome, pillaging and burning the villages of Santander and Andoa in September, 1856. They do not fight with bows and arrows, but with iron lances and a few muskets obtained from Ecuador. Raimondi makes them a branch of the *Jeveros*. *Velasco*; *Raimondi*; *Sotomayor*; *Commercio de Lima*.

Mures.—A branch of the *Moxos*.

Murganos.—A branch of the *Zaparos*.

Muricates.—A tribe of the River Putumayu. Directly their children are born they hide them in the depths of the forests, that the moonlight may not cause them any harm. *Martius*; *Von Spix*, iii, p. 1186.

Musquimas.—A branch of the *Urarinas*.

Musus.—See *Moxos*.

Mutayas.—A tribe whose feet are shipped with the toes pointing aft. *Acuña*, p. 119.

Mutuanis.—A tribe of the River Purus. *Acuña*, p. 107.

Naguegtaguelees.—A branch of the Abipones.

Nambiquaras.—A hostile tribe near the head waters of the River Tapajos. *Chandless*.

Naneruas.—A branch of the Campas.

Napeanos.—A branch of the *Yameos*.

Naperas.—(Prince.)

Napotoas.—A branch of the *Simigacs*.

Nasangoras.—A branch of the *Jeveros*, on the Morona. Very sanguinary.

Natoxoi.—See *Tobas*.

Nauuas.—A tribe of the upper Jurua. *Bates*, ii, p. 379.

Naunas.—A tribe of the River Jutay, marked on Fritz's map (1707) between the Ucayali and Yavari. *Acuña*, p. 99.

Naxamas.—(Prince.)

Nayros.—A branch of the *Moxos*. Prince.

Neguas.—A branch of the *Aguaricos*.

Neocayas.—A branch of the *Encabellados*.

Ncpas.—A branch of the *Simigacs*.

Nerecamues.—A branch of the *Iquitos*.

Neshuacas.—A branch of the *Campas*.

Nevas.—A branch of the *Avijiras*.

Nhengahibas or *Vienyahuras*.—Martius mentions them as living on the island of Marajo. They are called the *Iyara Uáras* or canoe men. Bates says they were formerly on the River Parà. *Martius*; *Bates*.

Ninanas.—A tribe on the tributaries of the Napo. *Portillo*.

Noctenes.—Same as *Mataguayos*.

Nongonis.—(Prince.)

Norris.—A branch of the *Moxos*.

Nugamus.—A branch of the *Zaparos*.

Nushinos.—A branch of the *Zapuros*.

Oaiapis.—A tribe of the Jari, tributary of the Guaratubarú. *Martius*; *Penna*.

Oas.—A branch of the *Simigacs*, on the banks of the Napo.

Ocoles.—Same as *Mataguayas*.

Ocoronos.—A branch of the *Moxos*. Prince.

Oiacas.—A tribe of the Rivers Majari and Parima.

Oiraaçú Tapuijas.—See *Juris*.

Ojotacs.—A tribe of the Gran Chacu. *Lozano*.

Omaguas, *Umanas*, or *Cambebas*.—Orellana mentions a chief named *Aomagua* or *Machiparo* near the mouth of the Putumayu River. The fabulous stories respecting the wealth of the *Omaguas* led to several expeditions in quest of them, the most famous of which were those of George of Spires in 1536 and of Philip von Hutten in 1541, both from Venezuela, and of Pedro de Ursua in 1560. Hutten is related to have seen the city of the *Omaguas* from a distance, in the centre of which were the palace of *Quarica*, the chief of the tribe, and a temple containing many idols. His guides added that further on there were other cities, larger and richer than the one they saw. The *Omaguas* defeated Hutten and forced him to retreat. In 1645 the Jesuit missionaries arrived in their country, on the banks of the River Marañon. Velasco says that the *Omaguas* are the Phœnicians of the river, for their

dexterity in navigating, that they are the most noble of all the tribes, that their language is the sweetest and most copious, and that these facts indicate that they are the remains of some great monarchy which existed in ancient times. After eight years of hard work Father Cujia succeeded in collecting them into villages. In 1687 Father Fritz came amongst them and established forty villages. He is known as the "Apostle of the *Omaguas*." Father Michael lived with them from 1726 to 1753. San Joachim de Omaguas, a village of the Marañon, was the residence of the Vice-Superior of the Missions. The Portuguese carried on hostilities against these mission villages and took many *Omaguas* away for slaves. From these Indians the Portuguese first obtained the caoutchouc or india-rubber. In the *Tupi* language the *Omaguas* are called *Cambebas* which, equally with *Omaguas*, signifies "flat heads." Condamine says that of all the savages who inhabit the banks of the Marañon the *Omaguas* are the most civilised, notwithstanding their strange custom of flattening their heads. The Ouvidor Ribeiro in his official tour in 1774 came to the village of Olivença on the Marañon, 13 leagues below Tabatinga, where he found the chief remnant of the *Omaguas*. They were fairer and better shaped than the other Indians, and were considered to be the most civilised and intelligent of the tribes. They had then abandoned the practice of flattening their heads. In a Report of one of the Viceroy's of Peru (1796) it is stated that the *Omagua* women tamed small monkeys for pets, and that the men wear beautiful head dresses of feathers. The *Omaguas* appeared to Lieutenant Maw (1827) to be more active and intelligent than the other Indians, and their huts were cleaner. Lieutenant Smyth considered them a finer race than any he had hitherto seen. Herndon gives the population of San Joachim de Omagua, in 1852, at 232 souls.

Von Spix, who calls them by their Portuguese name of *Cambebas*, says that they are very good-natured and honest, and that their language has many *Tupi* words in it. Like many other Amazonian tribes the *Omaguas* have a custom of proving the fortitude of their youths by scourging them, and of their maidens by hanging them up in a net and smoking them. After a death the family shut themselves up for a month with continued howling, and their neighbours feed them. The dead are buried in large earthen jars beneath the floors of their huts. Martius and Spruce consider the *Omaguas* to be a branch of the *Tupis*. They are still numerous and powerful towards the head waters of the Japura and Uaupés, though much diminished in the villages on the main stream of the Amazons. The *Omaguas* discovered the use of "*caucho*" or india-rubber in the middle of the sixteenth century, though it was not made known in Europe, by Condamine, until 1740. *Piedrahita Hist. Gen.*; *Fray Simon, Nat. Hist.*, vi; *Orellana*, p. 27; *Aceña*, p. 48; *Velasco*, iii, p. 197; *Condamine*, p. 189; *Southey's Brazil*, iii; *Maw*, p. 185; *Smyth*, p. 259; *Herndon*, p. 218;

Spix und Martius, iii, p. 1187; *Mem. de los Vireyes*; *Latham*, p. 507; *Hervas*, i, p. 265; *Spruce's notes*.

Opotaris.—A tribe near the foot of the Andes in the Paucartambo Montaña, conquered by the Inca Tupac Yupanqui. Now extinct, or with a different name. *Sarmiento*, p. 192.

Orequatus.—A tribe on the south side of the Amazons, below the mouth of the Madeira. *Acuña*, p. 117.

Orejones or *Cotos*.—A tribe on the left bank of the Lower Napo, near its mouth, so called from the practice of inserting a stick into the lobes of their ears. They are also met with on the Putumayu. The physiognomy of the men is described as repulsive, with broad face, high cheek bones, thick lips, flat nose, a low retreating forehead, and long coarse hair. They smear their bodies with *achiote*. Their ears are sometimes stretched until they reach the shoulders. The women are talkative and merry, and appear healthier than the men. The *Orejones* go naked. They are very fierce. Their huts are closed in on every side, no door, entry being effected by raising the thatch. They use large stone hatchets for felling trees, and prepare poison for arrows. They trade in hammocks, poisons, and provisions. Their language is nasal, guttural, and spoken with great velocity. *Villavicencio*; *Raimondi*; *Simson, R.G.S.J.*; *Tyler, R.G.S.J.*; *Portillo*.

Orclhudos.—See *Aroaquis*.

Oritos.—A tribe of the Napo, below the mouth of the Aguarico. *Villavicencio*.

Ormigas.—(*Prince*.)

Orouipianas.—See *Carabuyanas*.

Orumanaos.—A tribe of the Padauari. *Penna*.

Orystinesis.—A branch of the *Muniches*.

Ottomacas.—(*Prince*.)

Otuquis.—(*Prince*.)

Otures.—(*Prince*.)

Ozuanas.—A tribe of the River Jutay. *Acuña*, p. 99.

Pacas.—A wandering tribe on the Solimoens. *Martius*.

Parabarus.—A branch of the *Moxos*. *Prince*.

Pacaguaras.—A branch of the *Moxos*, the same as the *Parabarus*. They live to the north of the *Araonas*, from the Beni to the Madre de Dios, on both sides of the river. They were once numerous. They thrust a feather through the septum of the nose, and wear the eye teeth of alligators in their ears. Their complexion is white, and the women are beautiful. Their movements and conversation are rapid. They count by closing their hands, and as each finger is opened they say *nata*. When the fingers are finished they say *echesa*. Then they go to the toes. They are cultivators and are docile. Dr. Heath collected a vocabulary of their language. *Haenke*; *Heath*; *Church*; *Armentia*, p. 42; *Larrabure*; *Chervin*, i, p. 51.

Pacajas or *Pacaxas*.—A tribe of the River Pacaxa in Acuña's time. Martius mentions them as inhabiting the mainland opposite the island of Marajo, and as being *Igara-uáras*, or canoe men. *Acuña*, p. 130; *Martius*.

Pacajazes.—A tribe on the Pacajaz. *Martius*.

Pacanabas.—A branch of the Moxos. *Prince*.

Pachictus.—A branch of the *Manamabobos*. *Velasco*.

Pacimonaris.—A branch of the *Barrés*.

Pacunas.—Formerly on the Rivers Icabo and Fonte Boa, but perhaps no longer to be found there. *Martius*; *Penna*.

Pacurys.—See *Bacurys*.

Paiconeras.—A branch of the *Chiquitos*. Prince has *Paiconas*.

Paiguizes.—See *Mundrucus*.

Palancharas.—A tribe at the head waters of the Morona.

Palpumás.—A tribe of the River *Jurua*. *Penna*.

Pamainos.—In Capaulican. *Evans*; *Prince*.

Pambadequez.—A tribe of the Marañon preached to between 1638 and 1683. *Rodriguez*.

Pamenuas.—A tribe of the Rivers Japura and Uaupés. *Penna*.

Pammarys.—A tribe of the River Purus, a branch of the old tribe of *Purupurus*, the name of which is now extinct. A very peaceful tribe, good humoured, and famed for singing, but often afflicted with a skin disease. They plant bananas and manioc, but are essentially a waterside people, good at shooting fish or turtle with arrows, but unskilled at shooting upwards. Chandless saw more than sixty canoes floating down the river, each with a woman steering and a man standing like a statue in the bow. In the dry season they live in huts of palm leaf mats on the sand-banks. In time of floods they retire to the lakes, and make their mat huts on rafts, moored in the middle to avoid mosquitoes. Each family lives in a separate hut on its own raft. They work at making india-rubber. Polak gives fifty words in their language, and Chandless sixteen. *Polak*; *Chandless*, *R.G.S.J.*

Pana.—Language spoken by *Conibos*, *Cumbasus*, *Setchos*, *Tarapotos*, *Remos*.

Panús.—A tribe of the Huallaga, Ucayali, and Marañon. In 1670 Father Lucero collected some of them into the village of Santiago de la Laguna near the mouth of the Huallaga. In 1830 they joined the mission of Sarayacu on the Ucayali. At Sarayacu they wear a short jumper, which reaches down to the waistband of the trousers, dyed red and blue. Both sexes are very much addicted to drink. Smyth and Castelnau say that the *Panús* of Sarayacu belong to the tribe of *Setchos*. When Smyth was at Sarayacu the population amounted to 2,000. The canoes of the *Panús* are 30 or 40 feet long and 3 to 5 feet wide. Their manners are frank and natural, showing without any disguise their affection or dislike, their pleasure or anger. They have an easy, courteous bearing, and seem to consider themselves on perfect equality with everybody. In the 18th century a missionary among

the *Punas* alleged that he found manuscripts written on a kind of paper made of plantain leaves, containing, according to the statements of the Indians, a history of events in the days of their ancestors. Most of the tribes of the Ucayali talk what is called the Pana language. *Riviero Antiq. Per.*, p. 102; *Smyth*, p. 213; *Castelnau*, iv, p. 378; *Raimondi*; *Penna*.

Panajoris.—A branch of the *Simigars*.

Panunas.—A branch of the *Chiquitos*.

Panataguas.—A tribe of the Huallaga, visited by Father Lugando in 1631. *Mercurio Peruano*.

Panchis.—(Prince.)

Pangoas.—(Prince.)

Papaguas.—A tribe of the Marañon preached to between 1683 and 1727. *Velasco*.

Papunuas.—See *Isannas*.

Parabacas.—(Prince.)

Parahus.—A tribe of the River Jurua. *Penna*.

Paranapuros.—A branch of the *Chayavitos* preached to between 1638 and 1683. *Rodriguez*.

Parauquis.—A tribe of the Rio Negro, now extinct. *Martius*.

Pararavates.—A tribe near the Tapajos, which has an annual war with the *Mundurucus*. *Chandless*.

Parasicas.—(Prince.)

Paratoas.—A branch of the *Encabellados*. *Velasco*.

Parauamas.—A tribe of the Japura. *Penna*.

Parauanos or *Paravilhanos*.—A tribe on the lower part of the course of the Rio Branco. *Martius*; *Penna*.

Parentintins.—A tribe on the Madeira, and at the sources of the Canumá. *Martius*; *Penna*; *H. Smith*.

Pareris.—A tribe near the sources of the River Tapajos. They are indolent and inoffensive, and their trade with Diamantino consists chiefly in the sale of sieves. *Chandless*.

Paruamas.—A tribe of the Beni. *Armentia*.

Paruans.—A tribe of the Tocantins. *Penna*.

Pariquis.—A tribe of the Rivers Uatuma and Yaapiri. *Penna*.

Parranos.—A branch of the Yameos preached to between 1727 and 1768. *Velasco*.

Passes.—Once the most numerous tribe on the River Japura. They believe the sun to be stationary and that the earth moves. They call rivers the great blood vessels of the earth, and small streams its veins. They pay great respect to their conjurers. Their dead are buried in circular graves. The pleasing figures and slight features of the *Passes* confirm the report that they are the most beautiful Indians of this region. Their white colour and fine build distinguish them from their neighbours. Their hands and feet are smaller, their necks longer, and their appearance more resembles the Caucasian type. Their features are agreeable, and their women are some-

times beautiful. The men have no beards. The eyes are more open, finer, and farther from each other than is the case with other Indians, the nose finely formed and arched. They have a tattooed mark under the eyes and continuing along the face to the chin. The men cut their hair close, but the women wear it long. The *Pusses* are very clean. The women usually wear a shirt with short sleeves, and the men a kind of cloak. They are clever, gentle, open, peaceful and industrious. Martius says they intermarry very much among relations. They are now nearly extinct. Bates says they are the noblest of the Amazonian tribes. *Von Spie*, iii, p. 1186; *Martius*, iii, p. 1201; *Southey's Brazil*, iii, p. 722; *Bates*, ii, p. 194; *Simson*, p. 574; *Penna*.

Pastazas.—A branch of the *Jeveros*.

Pastivas.—A tribe of the Marañon preached to between 1727 and 1768. *Velasco*.

Paunacas.—(Prince.)

Pautes.—A branch of the *Jeveros*. *Villarivencio*.

Pauxianas.—A small tribe on the Rio Branco. *Martius*.

Pavas, *Pebas*, or *Pevas*.—A branch of the *Andoas* preached to between 1727 and 1768. They are met with between the Rivers Napo and Putumayu, and inhabit the villages of Pebas and Loreto. *Velasco*; *Villarivencio's map*; *Raimondi*; *Anónimo*, p. 365.

Pavianas or *Payanas*.—A tribe of the River Iça. *Martius*.

Paxianas.—A tribe of the Rio Branco. *Penna*.

Payaguas.—A tribe near the mouth of the Napo. *Hervas*, i, p. 186; *Villarivencio*.

Payansos.—(Prince.)

Paychahuas.—(Prince.)

Pebas.—See *Pavas*.

Pechujos.—A branch of the *Moxos*. *Prince*.

Pelados.—A tribe of the Huallaga preached to between 1683 and 1727. They are marked on Fritz's map (1707) between the Rivers Ucayali and Yaravi. Pedro Bohorques, who declared himself Inca in 1659, lived among the *Pelados* until 1665, believing the fabulous empire of the Gran Paytiti to be near the mouth of the Huallaga. The *Pelados* were possibly the same as the *Jibitos*, but Spruce, who investigated the subject on the spot, could not identify them with any existing tribe. *Fritz's map*; *Velasco*; *Spruce's notes*.

Penquicas.—(Prince.)

Pequeyas.—A branch of the *Encabellados* preached to between 1727 and 1768. *Velasco*.

Pequibas.—A branch of the *Chiquitos*.

Pequicas.—(Prince.)

Periates.—A tribe of the River Japura. *Penna*.

Pichabos.—(Prince.)

Picuamas.—See *Jumanas*.

Pilosones.—A fierce and hostile tribe in the forests to the north of Vilcapampa.

Only mentioned by Ocampo in 1571. *Ocampo*, p. 237.

Pinches.—A branch of the *Andoas*, preached to between 1683 and 1727. They are met with between the Tigre and Pastasa. *Velasco*; *Villavicencio*; *Anonimo*, p. 365.

Pindos.—A branch of the *Jerceros*. *Villavicencio*.

Piños.—(Prince.)

Piococas.—A branch of the *Chiquitos*. *Prince*.

Piojes.—A tribe of the Aguarico and Napo, also met with on the Putumayu. They are profuse drinkers of the *yoco*, an infusion of the bark of a liana, which causes vomiting. Their language is harsh. *Sinason*; *Portillo*.

Piras.—See *Uaupés*.

Pira-Pereiras.—"Fish Indians," see *Mauhés*.

Piriquitas.—A tribe of the River Tapajos. *Martius*.

Pirros, *Chuntaquirus*, or *Simirinchas*.—A tribe of the Ucayali, preached to between 1683 and 1727. The name *Chunta Quiru* is derived from the two Quichua words *Chonta* (a palm) and *Quiru* (tooth), from their habit of dyeing their teeth black with the root of the chonta palm. They are marked on Fritz's map (1707) on the east side of the Ucayali. Velasco says that they are descended from Inca Indians. They wander from place to place in canoes, and are good boatmen and fishermen. They are employed by traders to collect sarsaparilla, and to make oil from the fat of the manati. They navigate nearly the whole length of the Ucayali, and trade with the *Antis* within a comparatively short distance of Cuzco. Their chief resort is Santiago de los Pirros, at the junction of the Rivers Tambo (Apurimac) and Vilcamayu. They wear a cotton frock of a black colour called *cusma*. The *Pirros* are the most intelligent, handsome and brave of all the tribes on the Ucayali. *Fritz's map*; *Velasco*; *Smyth*; *Castelnau*; *Girbal MS.*; *Raimondi*.

Piums.—A tribe of the River Isanna. *Penna*.

Pizocas.—(Prince.)

Pochetys.—A tribe on the River Tocantins, said to be cannibals. *Martius*.

Pocoanas.—See *Carabuyanas*.

Pogisocas.—A branch of the *Chiquitos*.

Pomaris.—Indians of the Purus and Aquiry. *Prince*, p. 81.

Poramonas.—(Prince.)

Potoreras.—(Prince.)

Pucapauris.—(Prince.)

Puchacas.—A tribe on the Juina, tributary of the Tocantins. *Martius*.

Puinans or *Mapiarus*.—A tribe in centre of the northern part of the Pampa del Sacramento. They are not numerous, and are rarely seen by the mission Indians. *Smyth*, p. 235.

Pumacuas.—A tribe of the Jurna. *Penna*.

Pumuacanas.—(Prince.)

Punajicas.—(*Prince*.)

Punouys.—A tribe on the south side of the Amazons, below the mouth of the Madeira. *Açuña*, p. 117.

Puntagicas.—A branch of the *Chiquitos*.

Pupunha Tapuijas.—See *Uainumas*.

Purenumas.—A tribe of the River Japura. *Penna*.

Puru-purus.—A tribe of the River Purus, from sixteen to thirty days' voyage up. Chandless found that the name was extinct in 1865. They are almost all afflicted with a peculiar disease. The body is spotted with white and brown patches of irregular size and shape. "Rio dos Purus," means river of the spotted ones. Men and women go perfectly naked. Their huts are very small and of the rudest construction. Their canoes are flat-bottomed, with upright sides, mere oblong boxes, quite unlike those of any other Indians. They use neither the blow-cane nor bows and arrows, but have an instrument called the *palheta*, a piece of wood with a projection at the end to secure the base of a dart, the middle of which is held, with the handle of the *palheta* in the hand, and thus thrown. They have surprising dexterity in the use of this weapon, and readily kill game and fish with it. They make earthen pans for cooking. In the wet season, when the beaches are flooded, they make rafts of the trunks of trees bound together with creepers, and erect their huts upon them, thus living until the water subsides again. Their skin diseases perhaps arise from their habit of sleeping naked on the sands, without hammocks. They are probably now represented by the tribe called *Pammarys*. *Spic und Martins*, iii, p. 1174; *Castelnau*; *Wallace*, p. 514; *Chandless*.

Putumayus.—A general name for the tribes of that river.

Quajajus.—A tribe of the Arinos, a tributary of the Tocantins. *Martius*.

Quariterès.—A tribe between the River Jamarý and the hills of Guapore. *Martius*.

Quaruares.—A tribe between the Xingu and Tocantins. *Martius*.

Quatunsis.—See *Catauris*. *Açuña*, p. 107.

Quererus.—See *Carabuyanas*.

Qucuanacas.—A tribe of the River Jurua. *Penna*.

Quibuanas.—A tribe of the River Jurua. *Penna*.

Quibiquibas.—A branch of the *Chiquitos*.

Quilquidecanas.—(*Prince*.)

Quicanas.—A tribe of the Rio Negro. *Wallace*.

Quilivitas.—Supposed to be extinct in Velasco's time. *Velasco*.

Quinaus.—A tribe on the south side of the Amazon, below the mouth of the Madeira. *Açuña*, p. 117.

Quinceas, *Quimomecas*.—Branches of the *Chiquitos*.

Quinans.—A tribe on the south side of the Amazons, below the mouth of the Madeira. *Açuña*, p. 117.

Quinarupianas.—See *Carabuyanas*.

- Quinenes*.—A branch of the *Huitotos*. *Hardenburg*.
- Quingnanas*.—(*Prince*.)
- Quinhaos*.—A tribe of the River Uraricoera. *Penna*.
- Quirivinas*.—A branch of the *Andoas*.
- Quitagicas*.—A branch of the *Chiquitos*.
- Rarigoarais*.—A branch of the great *Tupi* nation. *Hervas*, i, p. 149.
- Remos*.—A tribe of the River Ucayali, considered by Velasco to be a branch of the *Campas*. They are a numerous and courageous people, and occupy a large tract of inland country, seldom coming down to the river. They are very fierce, and wage war upon all strangers. They are fair, their faces rounder than those of the other tribes of the Ucayali, their eyes like Chinese, and their stature very short. *Velasco* ; *Smyth* ; *Raimond*.
- Rentus*.—(*Prince*.)
- Resigeros*.—A branch of the *Huitotos*. *Hardenburg*.
- Rimachumus*.—A branch of the *Maynas*. *Velasco*.
- Roamaynas*.—A tribe of the River Pastasa, preached to between 1638 and 1683. They are marked on Fritz's map between the Pastasa and Tigre. Villavicencio places them between the Morona and Pastasa. *Fritz's map* ; *Velasco* ; *Rodriguez* ; *Villaricencio*.
- Rosaiñas*.—(*Prince*.)
- Rotoronnos*.—A branch of the *Moxos*.
- Ruanababas*.—A branch of the *Cumaros*.
- Rucahees*.—A branch of the *Abipones*.
- Rumos*.—A tribe of the River Napo. *Acuña*, p. 94.
- Ruonaguas*.—(*Prince*.) On the upper Ucayali.
- Sabainas*.—(*Prince*.)
- Sacopes*.—A race of cannibals. *Martius*.
- Saindarus*.—A tribe of the River Jurua. *Penna*.
- Saparos*.—A tribe of the River Mucajahis. *Penna*.
- Saparos*.—See *Zaparos*.
- Saparunas*.—A tribe of the River Beni. *Armentia* ; *Prince*.
- Sapis*.—A branch of the *Mocos*. *Prince*.
- Sapiboconas*.—(*Prince*.)
- Sarabecas*.—A branch of the *Chiquitos*.
- Sarés*.—A tribe on the Rio Negro, now nearly extinct. *Martius*.
- Sarus*.—A tribe of the River Madeira. *Penna*.
- Sarumas*.—A tribe between the Jamary and Tapajos. *Martius*.
- Satiboanas*.—(*Prince*.)
- Saucas*.—(*Prince*.)
- Saucanes*.—See *Mauhcs*.
- Sedahis*.—A tribe of the Uatuma. *Penna*.
- Sencis*.—A bold, warlike and generous tribe of the Ucayali, inhabiting a hilly country north-east of Sarayacu. They are on friendly terms with the

Indians of the missions, though not converted themselves. Father Plaza was well received by them, and he described them as the greatest warriors of the Ucayali. They have bows and arrows, lances, clubs, and *kowas*. The latter is a short spear pointed at one end, the other being in the shape of a club with stag's antlers fixed down the sides. They cultivate the soil and are very industrious. Those who are idle are killed as useless members of society. They have knowledge of the properties of medicinal herbs, and apply them with skill and success. They wear ornaments on the nose, ears, neck, and arms. They use canoes, and live on fish during the dry season.

Mercurio Peruano, No. 381; *Smyth*, p. 225.

Seños.—A tribe of the River Napo. *Acuña*, p. 94.

Sepaunabas.—A branch of the Campas. *Velasco*.

Serecumás.—A tribe of the River Uatamá. *Penna*.

Setebos.—A tribe of the Ucayali living north of the *Cushibos*. Since 1651 the Franciscans have occasionally visited them, but have generally been killed. Father Girbal, when he founded Sarayacu in 1792, induced some of them to settle there. They are now said to be quiet, tractable, and well disposed towards the missions. They trade up and down the Ucayali in canoes. They wear a cotton robe of copper colour, called *cusma*. The *Setebos* speak the Pana language. *Girbal MS.*; *Smyth*; *Herndon*; *Mercurio Peruano*; *Raimondi*.

Seuabohis.—A tribe of the River Japura. *Penna*.

Shensivos.—On the banks of the Yanayacu. *Sotomayor*.

Shipibos, *Sipivios*, or *Supebos*.—A tribe of the Ucayali, coupled with the *Setebos*, by *Smyth* and *Herndon*. The Franciscans visited them from time to time since 1651. In 1736 they routed and almost destroyed the *Setebos* in a bloody battle. In 1764 the Franciscans brought about a reconciliation between the two tribes. In the same year the *Shipibos* were collected into a village on the River Pisqui by Father Fresneda, but in 1767 all the missionaries were killed. After that fatal event Father Girbal was the first who visited them in 1790. They are reported to be wonderfully weather-wise. They have very rough skins, caused by mosquito bites. The *Shipibos* speak the Pana language. *Mercurio Peruano*, No. 51; *Mem. de los Vireyes*, vi, p. 139; *Smyth*; *Sala*, p. 182; *Herndon*; *Sotomayor*; *Raimondi*; *Larrabure*.

Shiripunás.—A branch of the *Zaparos*.

Shumanas.—A tribe of the Tocantins. *Bates*, ii, p. 241.

Sibucas.—A branch of the *Chiquitos*.

Siguíyas.—A tribe of the Araganatuba. *Acuña*, p. 105.

Simarrones.—A branch of the *Maynas*.

Simigæs or *Gæs*.—A group of tribes living on the banks of the Curaray and Tigre. They were preached to between 1638 and 1727. The remnant of them is now gathered into the small village of Andoas, near the confluence of the

Pastasa and Bobonaza. There are some wild people of this group. At one time they spoke in sixteen dialects. *Fritz's map*; *Velasco*; *Villavicencio*; *Spruce's notes*.

Simirinchés.—See *Pirros*.

Sinabus.—A branch of the *Moxos*. *Prince*, p. 81.

Sinchictus.—A branch of the *Zaparos*.

Singacuchescas.—Another name for the *Ituales*. *Anonimo*, p. 367.

Sirineyris.—See *Chunchos*.

Sirionos.—See *Guarayos*.

Siroas.—A tribe between the sources of the Rivers Apapuris and Cayairy, western branches of the Uaupés. *Martius*.

Siusys.—A tribe of the River Isanna. *Penna*.

Soboybos.—(*Prince*.)

Solimoes or *Yurimanas*.—A tribe of the Amazons, formerly powerful, from which the Portuguese gave the name of the river.

Spuñas.—(*Prince*.)

Suariranas.—The same as the *Solimoes*. Once it was a tribe of the Rivers Teffé and Coari, and extending all along the main stream of the Amazons from Barra to Peru, but now extinct. In 1788 Ribeira reported that the chief remains of this once numerous tribe were settled at the mouth of the Coari. *Southey's Brazil*, iii; *Ribeira*.

Suchichis.—A tribe believed to be already extinct in the time of Velasco. *Velasco*.

Suchimanis.—A branch of the *Chunchos*.

Sucumbios.—A tribe to the eastward of Cuzco. *Velasco*.

Sumirinchés.—In the Report of the Viceroy Gil Taboada. *Mém. de los Virreyes*; *Prince*, p. 73.

Suoriranas.—A tribe of the Tapajos named after a palm-tree called *suouari*. *Martius*.

Supinus.—A branch of the *Zaparos*.

Suriguas.—*Chervin*, i, p. 51.

Tabalosos.—A branch of the *Jereros*. *Rodriguez*.

Tabolas.—A branch of the *Juris*.

Tabucas.—A branch of the *Chiquitos*.

Tucanas.—A tribe inhabiting the banks of the River Mapiri and those of the lower part of the Madre de Dios. They live exclusively on the river banks, and are met with at Guanay. Their food is fish and monkeys. They are clever in making woven articles from cotton. Dr. Heath made a vocabulary of their language. *D'Orbigny*, iii, p. 364; *Heath*; *D. Forbes*; *Armentia*; *Church (Geog. Mag., April, 1877)*; *Ballesteros*; *Prince*; *Chervin*, i, p. 50.

Tucanhops.—A tribe of the Xingu River. *Martius*.

Tucus.—A tribe of the Rio Bronco. *Penna*.

Tacuhunos.—A tribe between the Rivers Tacuhuno and Tocantins. *Martius*.

Tucunas.—See *Ticunas*.

Tagaris.—A tribe of the River Nhamunda. *Penna*.

Taguacuas.—A branch of the *Manamabobos*.

Taguans.—A tribe on the river up which the race of Amazons is said to live. *Acuña*, p. 122.

Tamas.—A tribe of the River Napo, a branch of the *Aguaricos*. *Acuña*, p. 94 ; *Velasco*.

Tamares.—A tribe on the River Jurua. *Martius*.

Tamoenos or *Tamuanas*.—A tribe of the River Teffé and at Ega. *Southey's Brazil*, iii ; *Martius* ; *Penna*.

Tanopicas or *Tañipicas*.—(*Prince*.) A branch of the *Chiquitos*.

Taos.—A branch of the *Chiquitos*.

Tapacuas.—A tribe on the mountainous eastern side of the Tocantins. *Martius*.

Tapacuras.—A branch of the *Moxos*.

Tapajosos.—A tribe of the Tapajos. *Acuña*, p. 121 ; *Martius*.

Tapanhonas.—A hostile tribe near the head waters of the Tapajos. They reject all attempts at intercourse. *Chandless*.

Tapacanas.—A tribe of the Jurua and Jutay Rivers. *Martius*.

Tapicarís.—A tribe of the River Mucajahi. *Penna*.

Tapietes.—(*Prince*) ; *Chervin*, i, p. 102. Same type as *Chirihuanas*.

Tapirapis.—A tribe on the western side of the Araguay. *Martius*.

Tapucuracas.—A branch of the *Chiquitos*.

Tapuras.—See *Uaupés*.

Tapuricus.—(*Prince*.)

Tapuyas.—A tribe of the River Pacaxa. *Acuña*, p. 130.

Tarianas.—See *Uaupés*.

Tarnnas.—A tribe of the Rio Negro which peopled Barra. The first Portuguese settlement on the Rio Negro was formed of these Indians in 1669. *Martius* ; *Penna* ; *Spruce's notes*.

Tasias.—A branch of the *Campas*.

Tasuias.—See *Mauhes*.

Tatus.—See *Uaupés* and *Mauhes*.

Taumacos.—A branch of the *Chiquitos*.

Tavnies.—A tribe of the Gran Chacu. *Lozano*.

Tapassu-Tapuüjus.—A tribe at the sources of the Apapuris. *Martius*.

Tcuimbucas.—See *Uaupés*.

Tequetes.—A branch of the *Chunipies*.

Terarus.—A tribe of the Araganatuba. *Acuña*, p. 105.

Terrummas.—A tribe between the Rivers Uatuma and Anavilhana. *Martius*.

Tiaris.—A tribe of the River Purus. *Martius*.

Tiassus.—See *Uaupés*.

Tiatinaguas.—(*Prince*.)

Tibois.—A branch of the *Moxos*. *Prince*.

Ticunas, *Tacunas* or *Jumanas*.—A tribe of the Marañon, neighbours of the *Omaguas*,

preached to between 1683 and 1727. They people Tabatinga, the frontier Brazilian post on the Marañon, and San Paulo de Olivença. They go naked and have a tattooed oval round their mouths, which the men wear broader than the women, also lines from the corners of the mouth to the ears. They believe in a good and an evil spirit named *Nanuloa* and *Locazy*. They fear the evil spirit, and believe of the good one that, after death, he appears to eat fruit with the departed and takes them to his home. Their dead bodies are arranged with the extremities placed together, and the face towards the rising sun, with broken weapons and fruit placed in the bosom. They are then buried in great earthen jars, and the ceremony is concluded by a drinking festival. Wives are obtained by a present to the parents. As soon as a child can sit up, it is sprinkled with a decoction from certain leaves, and receives the name of one of its forefathers.

Next to the *Pusses* and *Juris*, the *Ticunas* are the best-formed Indians of this region. They are not so well built as the former, though more slender than most of the tribes. Their faces are round, nose thin and sharp, and expression generally good-humoured and gentle. Their disposition is open and honest. They are darker than most of the Indians of the Marañon and beardless. They adorn their necks with strings of jaguars' and monkeys' teeth, and their arms with feathers. One of their occupations is the preparation of poison. *Acuña*, p. 96; *Castelnau*; *Velasco*; *Herndon*; *Von Spic*, iii, p. 1182; *Bates*, ii, p. 395; *Martius*, iii, p. 1206; *Raimondi*; *Simson*, p. 574.

Ticuneric.—(*Prince*, p. 81.)

Tijucos.—See *Uaupés*.

Tillingos.—(*Prince*.)

Timinaras.—A branch of the *Chiquitos*.

Tinguneses.—A tribe of the Huallaga, preached to by Father Lugando in 1631.

Possibly identical with the *Cholones*. *Mercurio Peruano*; *Velasco*.

Tipunas.—A tribe of the River Jutay. *Acuña*, p. 99.

Tiputinis.—A branch of the *Jeveros* according to *Velasco*, but Villavicencio places them under the *Zuparos*. They were visited by missionaries from 1727 to 1768.

Titanes.—(*Prince*.) *Velasco*; *Villavicencio*.

Tivilos.—A branch of the *Jeveros*.

Tiyubabas.—(*Prince*, p. 81.)

Tobas.—A savage tribe of the Gran Chacu. On the banks of the Rivers Pilcomayu and Bermejo. The word *Tuba* means "opposite" in Guarani. The Spaniards were told by the *Guaranis* of people on the opposite side of the Paraguay or *Tobai*. They have a very low type of skull. They are exclusively hunters. Unable to count beyond five. *Lozano*; *Dobrizhoffen*; *Moreno*; *Pelleschi*; *Hervas*, i, p. 176; *Gibbon*, p. 164; *Graham Kerr*; *Chervins*, i, p. 129.

Tocanhopes.—A tribe near the River Xingu, in the country between the Pacojaz and the Guanapu. *Martius*.

Tocantinos.—A tribe at the mouth of the Tocantins. *Hervas*, i, p. 149: *Martius*.

Tonocots.—A tribe of the Gran Chacu. *Lozano*, p. 51.

Topus.—(*Prince*.)

Toquedas.—A tribe of the River Jutay. *Martius*; *Penna*.

Toquisteneses.—A tribe of the Gran Chacu. *Lozano*.

Toras or *Torazes*.—A tribe formerly on the lower Madeira but not now heard of in that region. *Martius*.

Torenos.—(*Prince*, p. 81.)

Torococyes.—(*Prince*.)

Toromonas.—A branch of the *Chiquitos*, along the Madre de Dios and Madidi. *Church*; *Armentia*; *Prince*, p. 81; *Chervin*, i, p. 50.

Tracuás.—A wandering tribe of the Solimoens. *Martius*.

Tremajoris.—A branch of the *Simigoes*.

Trinas.—(*Prince*, p. 81.)

Tubacicas.—A branch of the *Chiquitos*. *Prince*.

Tucales.—A tribe between the Rivers Tigre and Pastasa. *Villavicencio's map*.

Tucanos.—See *Juris* and *Uaupés*.

Tucujus.—A tribe of the River Tuere. *Martius*.

Tucunderas.—See *Uaupés*.

Tucupis.—See *Mucetenes*.

Tucuriys.—A tribe on the south side of the Amazons. *Acuña*, p. 100.

Tuinamayuas.—See *Carabuyanas*.

Tulumayus.—A tribe on a tributary of the upper Huallaga. They were first visited by Father Lugando in 1631. *Mercurio Peruano*.

Tumanas.—(*Prince*.)

Tumarores.—A tribe between the Rivers Jamary and San Simao. *Martius*.

Tumbiras.—A tribe of the Rivers Iça and Japura. *Penna*.

Tumupacos.—(*Prince*, p. 81.)

Tunachos.—A branch of the *Chiquitos*.

Tupajuros.—A branch of the *Tupis* on the River Pará. *Martius*.

Tupis.—A very extensive Brazilian stock. The word *Tupi* means "Comrade." They called all other people *Tupuyas* or foreigners. The original site of the *Tupi* nation, in Spruce's opinion, was on the River Amazons, and from its mouth they spread far south along the Brazilian coast. When pressed by the Portuguese they seem to have fallen back up the Amazon valleys to the very roots of the Andes. Thus the languages of the *Omaguas*, *Coromas*, and other Peruvian tribes prove them to be descended from the great *Tupi* stock. *Martius* gives the *Tupi* nation a very wide range, from the Atlantic to the roots of the Andes, and from the River Amazons to Paraguay. *Latham* classes the *Omaguas* and *Tupis* as branches of the great *Guarani* stock, as also does *Hervas*. The "Lingoa Geral," or language which is the general

medium of communication between the Indians of the Amazons and the Portuguese, is a corruption of the Tupi language. In the *Tupi* there are terms, often very complicated, to express exact degrees of relationship through at least three generations. All the grandchildren of the same grandfather consider themselves as brothers and sisters. The first *Tupi* grammar and vocabulary were by Father Joseph Ancheta. Spruce wrote a complete *Tupi* grammar. The descendants of the Tupi stock, on the shores of the lower Amazons and at Pará, have long been civilised, and the Portuguese corruptly call them *Tapuyas*. They are stout, short, and well made. They learn all trades quickly and well, and are a quiet, good-natured, inoffensive people. They form the crews of the Pará trading canoes. *Martius*; *Wallace*, p. 478; *Spruce's notes*; *Latham*; *Hervas*, i, p. 147.

Tupigocis.—A branch of the *Tupinambas*. *Hervas*, i, p. 149.

Tupinambas.—A powerful and numerous Brazilian tribe in former days. A branch of the great *Tupi* stock. They fled before the European invaders. In the time of Acuña some of them were settled on the great island at the mouth of the Madeira, also on the lower Amazons, and River Pará. Many interesting particulars respecting their history and customs will be found in Southey's Brazil. *Acuña*, p. 119.

Tupitimis or *Tuputinis* a branch of the *Zaparos*.

Turiquanas.—(*Prince*.)

Tururis.—A tribe of the Rio Negro and Madeira. *Martius*; *Penna*.

Tuguneris.—See *Chunchos*.

Uabixanas.—A small tribe on the Rio Branco. *Martius*.

Uacarauhas.—A tribe of the River Jutay. *Martius*; *Penna*.

Uacnambeus.—"Humming bird Indians." A tribe on the lower part of the Japura. They much resemble the *Curetus* but are distinguished from other tribes by a small blue mark on the upper lip. Their women always wear a small bark apron. Latham gives twenty-two of their words, and their language shows them to be of the same family as the *Barrés*. *Latham*, p. 488; *Wallace*, p. 510; *Spruce's notes*.

Uaiapanas.—Name of a tribe. *Martius*.

Uainamays.—A tribe far up the Purus on the left bank. *Chandless*.

Uainumas.—A tribe of the Rivers Iça and Caunari. They intermarry very much amongst relations, and Martius thinks this is a cause of degeneracy. He mentions six branches of the tribe. *Miriti*—*Tapuijas*, *Pupunha*—*Tapuijas*, *Assai*—*Tapuijas*, *Moira*—*Tapuijas*, *Juarete*—*Tapuijas*, *Jacani*—*Tapuijas*. *Martius*; *Bates*.

Uaiurus.—A tribe of the Rio Branco.

Uamanis.—A tribe of the River Coari and on the upper Marañon. Probably extinct. *Ribeiro*; *Martius*; *Penna*.

Uananas.—A tribe of the River Japura. *Penna*.

Uanibas.—A tribe formerly on the Aniba, now extinct. *Martius*.

Uapixanas.—A tribe of the Rio Branco. *Penna*.

Uarancoacenas.—A tribe formerly settled at Earoveiro. *Martius*.

Uarapas.—A tribe of the Tapajos. *Martius*.

Uarapirangas.—"Red men." A tribe so called. *Martius*.

Uaraycus.—A tribe of the Rivers Jutay and Jurua, and also on the Amazon. To try the fortitude of their maidens they hang them up in a net to the roof of a hut, exposed to continual smoke where they fast as long as they can possibly bear it. The youths are flogged for the same purpose. A youth must hunt and work for his bride to whom he is engaged from a child. They burn their dead, and bury the ashes in their huts. See *Guaraicus*. *Spix und Martius*, iii, 1187-90.

Uaupés.—An extensive group of tribes, inhabiting the banks of the Uaupés, a tributary of the Rio Negro. Two of them, the *Piras* and *Carapanas*, are mentioned by Acuña, p. 105. The other branches of the *Uaupés* are as follows:—*Queianas*, *Ananas* (pineapple), *Arapassos* (woodpeckers), *Banhunas*, *Cubeus* (cannibals), *Cohidias*, *Corocoros* (green ibis), *Couas* (wasp), *Tucunderas* (ant), *Uaracus*, *Desannas*, *Gis* (axe), *Ipecas* (duck), *Jacamis* (trumpeter), *Macunas*, *Mucuras* (opossum), *Piraiurus* (fish's mouth), *Umaías*, *Uacarras* (herons), *Pisas* (net), *Miritis* (palm), *Taiassus* (pig), *Tapurus* (tapirs), *Tarianas*, *Tatus* (armadillos), *Tenimbueas* (ashes), *Tijucos* (mud), *Tucanos* (toucans).

They are tall, stout, and well-made. Hair jet black and straight, worn in a long tail down the back, often to the thighs; very little beard, skin a light glossy brown. They are an agricultural people, cultivating manioc, sugar-cane, yams, maize, tobacco, and camotes. Their weapons are bows and arrows, lances, clubs, and blow-canes. They are great fishermen. Many families live together in one house, a parallelogram, 115 feet long by 75, and 35 feet high. The roof is supported on fine cylindrical columns, smooth and straight, formed of the trunks of trees. At the gable end there is a large doorway 8 feet high. The furniture consists of net hammocks, earthen pots, pitchers and baskets. Their canoes are all made of a single hollowed tree, often 40 feet long, paddles about 3 feet long with an oval blade. The men wear a cloth round the loins, but the women go quite naked. The men use many ornaments and a circlet of feathers round the head. A cylindrical white quartz stone is invariably carried on the breast as a charm, suspended by a chain of black seeds. The dead are buried inside the houses. Every house has its *Tushaná* or chief, the office being hereditary. They have sorcerers called *Payes*, but do not believe in a god. Some of the *Uaupés* tribes never intermarry among themselves, but obtain wives from other kindred tribes; and these inter-marrying tribes always remain at peace with each other. This is the case with the *Tarianas* and *Tucanos*. The inter-marrying *Uaupés* tribes are perhaps more industrious and agricultural than any other Amazonian people.

The *Uaupés* derive their name from a little bird with a very glistening

forehead called *Uaupe* or *Aupe* which makes its nest, and gets its living among aquatic plants. These Indians, when sweating freely, rub their faces with certain leaves which remove all impurities from the skin, and leave it smooth and shining. Hence the name *Uaupés* or "shining faces." The modern names of the *Uaupés* tribes have chiefly been given them by their Portuguese and *Tupi* neighbours, from peculiarities in their persons and customs. *Wallace*, pp. 480–506.

Uayupes.—A tribe of the River Coari. *Ribeiro*; *Spruce's notes*.

Ubahias.—(*Uba-uvas*).—"Men of the forest." Neighbours of the *Sarumas*.

Ubisonccas.—(*Prince*.)

Ubi Tapuüjas.—See *Juris*.

Ucayales.—A branch of the *Omaguas*. *Rodriguez*.

Uchucas.—A tribe between the Rivers Tigre and Pastasa. *Villaricencio's map*.

Uebytus.—See *Juris*.

Uereuenas.—A tribe on the Isanna, a tributary of the Rio Negro. *Ribeiro* reported on them (1775) and Southey repeats some strange stories. *Ribeiro*; *Southey*, iii, p. 723.

Ugarannaos.—A branch of the *Chiquitos*.

Ugiaras.—A tribe of the Marañon, below the mouth of the Huallaga. *Rodriguez*.

Ujauas.—A tribe of the River Iça, and settled in villages of the Iça and Rio Negro. *Martius*.

Umauas.—See *Omaguas*. A tribe of the River Japura, on the other side of the falls of the *Arara-coara*. They are said to be cannibals. *Martius*, iii, p. 1243.

Ungumanas.—A branch of the *Maynas*.

Uniabas.—(*Prince*.)

Unibucas.—A tribe of the Ucayali visited by Father Lucero in 1681, and also by other missionaries between 1683 and 1727. *Velasco*.

Uñonos.—A branch of the *Ugiaras*. *Velasco*.

Unutis.—(*Prince*.)

Upanas.—A tribe on the east of the Morona. *Villaricencio's map*.

Upataninabas.—A branch of the *Pioros*. *Velasco*.

Urariens.—A tribe of the River Aucruhi. *Penna*.

Urarinas.—A tribe of the Pastasa, preached to between 1727 and 1768. *Hervas*, i, p. 262; *Velasco*; *Prince*, p. 73.

Urayaris.—A branch of the *Carabuyanas*.

Urinas.—Constantly at war with the *Omaguas*. *Edwards*, p. 77.

Urizsammas.—See *Jumanas*.

Urubatingas.—A tribe on the south side of the Amazon below the mouth of the Madeira. *Acuña*, p. 117.

Urubus or "vulture Indians." A tribe of the Jutay. *Martius*; *Penna*.

Uspas.—A tribe already extinct in *Velasco's* time. *Velasco*.

Utunturas.—(*Prince*, p. 81.)

Uü Tapuijas.—See *Mauhés*.

Uyapas.—A tribe of wild Indians north of the Mambares. *Martius*.

Varauamas.—See *Jumanas*.

Velelas.—A tribe of the Gran Chacu. See *Chunipies*.

Veripones.—(*Prince*, p. 81.)

Wawayunas.—A tribe of the Beni. *Armentia*.

Xacurukinas.—A tribe on the river of the same name. *Lozano*; *Martius*

Xamas.—A tribe of the Teffé and Japura. *Ribeiro*; *Penna*.

Xaperus.—A tribe of the River Mucajahi. *Penna*.

Xibaros.—See *Jereros*.

Ximanas.—A tribe between the Rivers Putumayu and Japura who kill their first-born children. They are esteemed for willing industry. They burn the bones of their dead, and mingle the ashes with their drink. *Southey's Brazil*, iii, p. 722; *Wallace*, p. 511.

Ximbiuas or *Ximboas*.—A tribe on the west side of the Araguay. *Martius*.

Xubaras.—See *Mauhés*.

Xuberesas.—A branch of the *Chiquitos*.

Yabahanes.—A branch of the *Barrés*, between the Rivers Inabú and Maravia tributaries of the Rio Negro. *Martius*; *Spruce's notes*.

Yabuyanos.—A branch of the *Huitotos*. *Hardenburg*.

Yacariguaras.—A tribe of the Putumayu. *Acuña*, p. 99.

Yucucaraes.—A tribe of the Rio Negro. *Acuña*, p. 110.

Yaguas.—A tribe on the Marañon and Putumayu, preached to between 1683 and 1727. In 1852 they had a village below *Omagnas*. They form part of the population of Loreto, Pebas, and other villages on the Amazons. *Velasco*; *Herndon*, p. 226; *Raimondi*; *Simson*, p. 574.

Yaguunais.—A tribe of the Araganatuba. *Acuña*, p. 105.

Yamamadis.—(*Prince*.)

Yameos.—A tribe of the Marañon preached to between 1683 and 1727. On Fritz's map between the Tigre and Napo. *Fritz's map*; *Velasco*; *Penna*; *Hervas*, i, p. 262; *Prince*.

Yamiacas.—A tribe on the Inambari, speaking the Pana language. *Nordenskiöld*.

Yamoruas.—A tribe of the Araganatuba. *Acuña*, p. 105.

Yanaiguas.—Also called *Sirionos*, south of the *Chiriguanas*. *Prince*, p. 81; *Chervin*, i, p. 102.

Yanasimis.—See *Mañaris*.

Yapatiris.

Yapuas.—A branch of the *Encabellados*.

Yaramas.—(*Prince*.)

Yarapos.—A branch of the *Yameos*.

Yaribarus.—See *Carabuyanas*.

Yarocaricas.—(*Prince*.)

Yasheos.—A branch of the *Encabellados*.

Yasunis.—A branch of the *Zuparos*.

Yauanas.—A tribe of the Japura. *Penna*.

Yauáperys.—A tribe of the river of that name, a tributary of the Rio Negro.

They are reported to be savage and hostile. *Lacerda*.

Yauaras.—A tribe of the River Madeira. *Penna*.

Yequeyos.—A branch of the *Putumayos*. *Velasco*.

Yetes.—A branch of the *Putumayos*. *Velasco*.

Yguaranis.—A tribe of the Araganatuba. *Acuña*, p. 105.

Yiritucas.—A branch of the *Chiquitos*.

Ymirayares or *Ibirijares*.—("Wood man") only one tribe known by this name, a branch of the *Tupis*. *Martius*.

Ynuris.—A branch of the *Simigaes*.

Yoguimonas.—(*Prince*.)

Yomos.—(*Prince*.)

Yquitos.—See *Iquitos*.

Yscaysingas.—*Ocampo*, p. 236.

Yubamonas.—(*Prince*.)

Yucunas.—A tribe living some distance up the Japura. The chief lives in a conical pyramid. Their shields are covered with tapir skins. They have poisoned spears. They cultivate manioc, which they use in the form of tapioca. *Southey's Brazil*, iii, p. 721; *Martius*; *Penna*.

Yucunampas.—A tribe of the Gran Chacu, see Chunipies. *Lozano*.

Yumaguaris.—A tribe of Indians near the River Amazons, who are employed in washing for gold. *Acuña*, p. 103.

Yumarimanos.—(*Prince*.)

Yupias or *Yupuas*.—A tribe of the Teffé. *Ribeiro*; *Martius*.

Yurucares or *Yuracarecas*.—A branch of the *Chiquitos* living in the Bolivian department of Beni, along the base of the Andes, in a province of which Chimoré is the capital. They are not numerous. *Hervas*; *Gibbon*; *Prince*; *Chervin*, i, p. 50.

Yurimaguas.—A branch of the *Omaguas* preached to between 1683 and 1727. The village of Yurimaguas is situated on the Huallaga, above Laguna, and has about 250 inhabitants. *Velasco*; *Herndon*, p. 171; *Raimondi*.

Yurunas.—A tribe of the Putumayu. *Acuña*, p. 99.

Yurusunes.—A tribe of the River Napo, living to the south of the *Encabellados*. *Acuña*, p. 94; *Velasco*.

Yxisteneses.—A tribe of the Gran Chacu. *Lozano*, p. 51.

Zahenos.—A branch of the *Chiquitos*.

Zamanucas.—A branch of the *Chiquitos*.

Zaminauas.—A branch of the *Conibos* near the source of the Jurua. *Bates*, ii, p. 379.

Zamoras.—A branch of the *Jeceros*. *Villavicencio*.

Zamucos.—A branch of the *Chiquitos*. *Prince*, p. 82.

Zapas.—A branch of the *Simigaes*.

Zaparos.—A tribe of the River Napo. According to Velasco these were a branch of the *Simigaes de Curaray*, but Villavicencio considers them to be an important parent tribe. They occupy the country between the River Napo and Pastasa, close to the Curaray on the south 0°-40' S. to 2°-20' S. over about 12,000 square miles. Villavicencio divides them into three branches all speaking the same language, which is copious, simple in grammatical construction, somewhat nasal and guttural. Tyler gives thirteen branches or subdivisions:

Ahuishiris, Andoas, Curarayes, Matagenes, Mautas, Nugamus, Nushinus, Rotunos, Shiripunos, Sinchictus, Supinus, Tiputinis, Yasunis.

Carlos Prince gives a longer list. This family of tribes is more pacific than that of the *Jeveros*, but more dexterous in hurling the lance. Uniting against a common enemy, they live in a state of continual feud among themselves. Yet they are said to be docile, hospitable, obliging, and ready to mix with Europeans. Their physiognomy resembles that of the Chinese—rounded faces, small oblique-set eyes, thick flat noses, thick lips, and beardless. They are indolent but very hardy. Those who live by fishing, on the banks of the rivers, are of a copper colour, but those who live in the shade of the forests have white skins. They live in small collections of huts and sleep in hammocks. The women have agreeable expressive countenances, black animated beautiful eyes, humane and sensitive hearts, generous and hospitable dispositions. Polygamy is general. Their abodes are open on all sides, and contain nothing but palm fibre hammocks. These sheds are temporary, for the *Zaparos* move about after game. The *Curarayes*, *Yasunis*, and *Tiputinis* are exceptions, as they remain in villages and cultivate the ground. Their only industries are plaiting hammocks and weaving fishing nets. They wear a long shirt of bark fibre called *Llanchama*. Their weapons are the *macana* (club) and spear, the blow-cane and poisoned arrows, the poison carried in bamboo tubes.

The *Shimantu* is their oracle or medicine man who has access to the *Munjiu* or evil spirits. He drinks the divining liquor called *Ayahuasca* (a Quichua word), which throws him into a delirious trance. They feed on game and fruit, and drink *Guayusa* or Napo tea, made from a small shrub, and *Masato*, or fermented yuca. *Acuña*, p. 94; *Velasco*; *Villavicencio*; *Jamson* (1857); *Tyler, R.G.S.J.*

Zopitalaguas.—A tribe of the Gran Chacu. *Lozano*.

Zarabecas.—(*Prince*.)

Zebecas.—(*Prince*.)

Zemuquicas.—A branch of the *Chiquitos*.

Zeoqueyas.—A branch of the *Papaguas*. *Velasco*.

Zepas.—A branch of the *Camavos*. *Velasco*.

Zepucayas.—A tribe living on the Amazon below the mouth of the Madeira. *Acuña*.

Zuñas.—Supposed to have been extinct in Velasco's time. *Velasco*.

Zeas or *Ziyus*.—A tribe of the River Putumayu. *Acuña*, p. 97.

Zibitos.—See *Jibitos*.

Zucoyas.—Same as the *Zeoqueyas*.

Zurinas.—A tribe on the River Amazons below the mouth of the Purus. They were very expert in making comfortable seats, and in carving images. *Acuña*, p. 107.

THE TRIBES CLASSIFIED ACCORDING TO THE RIVERS THEY FREQUENT.

On a closer investigation of the list we find 485 distinct tribes in all the periods, including 26 in the Gran Chacu, and doubtfully within the Amazonian basin. Deducting these there are 459. *Acuña* gives a great number of names, but only those can be counted which are also given as names of tribes by later authorities; the others must be considered as extinct or as being now under different names. *Velasco* and *Martius* mention several tribes as being extinct or nearly extinct in their time. Altogether 106 must be deducted as extinct, leaving 338. About 15 more may be deducted as practically extinct, leaving 323 at the outside.

First, the Andean tribes should be considered, frequenting the rivers taking their rise in the Andes, namely, the *Curaray*, *Santiago*, *Tigre*, *Pastasa*, *Morona*, *Marañon*, *Huallaga*, *Napo*, *Ucuyali*, *Beni*, *Madre de Dios*.

Of these several undoubtedly descend from Inca Indians, some even from Spaniards. Of the actual Amazonian tribes, several belong to the *Pana* family of tribes, one or two are *Guarani* (*Tupi*), perhaps more, and the rest cannot yet be classified.

TIGRE AND PASTASA.

Conambos, *Iquitos*, *Simigacs*, *Ciuares*, *Coronados*, *Magnas* (a general name for the *Marañon* tribes), *Roamaynas*, *Tucales*, *Uchucas*, *Urarinas*.

MORONA.

Locroños, *Pelancharas*, *Upanas*.

MARAÑON, JEVEROS, ABIJIRAS.

Aguarunas, *Aisuaris*, *Andoas*, *Camavos*, *Chayavitas*, *Chepeos*, *Chiripanos*, *Gaes*, *Guajayos*, *Guasitayos*, *Gucucoyas*, *Huambisas*, *Icahuates*, *Itucales*, *Japuas*, *Jutipos*, *Lliquinos*, *Maparinas*, *Pambadequez*, *Papaguas*, *Pastiras*, *Ujiaras*, *Yameos*.

The *Abijiras* and *Iquitos* are closely allied. They are fishers and hunters. Of the *Jeveros*, there is a full account in the list—an important group of tribes. The remnant of the *Simigues* or *Gaes* is now gathered into one small village of *Andoas*, with a few families of the *Andoa* tribe. The *Huambisas* are a very warlike branch of the *Jeveros*, with some Spanish blood. The localities of the others are only given.

HUALLAGA, 150 miles.

Aguaras, Aguanas, Cholones, Chuzeos, Cocomas, Cumbasinos, Jibitos, Motilones, Panataguas, Puinaus, Tiganeses, Tulumayus.

The Huallaga is memorable in three ways. It was into its valleys that a great body of *Chancas* fled, after their defeat by the Incas in about 1420. It was from the Huallaga that the second expedition started, that descended the River Amazons under Ursua and Aguirre; and it was on the Huallaga that Pedro Bohorgues, calling himself Inca, established himself in 1659. The *Cholones*, settled in four villages on the Huallaga, are very expert marksmen with the blow-gun. The *Motilones* or *Lamistas* are settled in the principal places on the river, employed chiefly in agriculture. Near the mouth of the *Huallaga* there was a tribe called the *Cocomas*, who speak a dialect of the *Tupi*, and are the most western offshoot of the great Guarani stock. Spruce considered them to be a remnant of the *Tupinambas*—a shrewd, provident, hard working people, and good canoe men. There are three inland tribes in the Pampa del Sacramento, the *Ajuanas*, *Cumbasinos*, and *Puinaus*, but little is known about them.

UCAYALI (navigable 1,400 miles).

Conibos, Pirros, Setebos, Shipibos, Sencis, Remos, Panas, Cashibos, Amajuacas, Capanahuas, Curanas, Manamabobos, Manahuas, Unibuesas, Mayorunas.

This is a very interesting group of tribes, most of them speaking the *Pana* language. The *Conibos*, speaking *Pana*, are mostly Christianised, quiet, tractable people, good boatmen and fishermen. The *Pirros* also speak *Pana*. They navigate the whole length of the *Ucayali*, 1,400 miles, trading with the *Antis* within a short distance of *Cuzco*. They are the most intelligent, handsome, and brave of all the *Ucayali* tribes. The *Setebos* also speak *Pana*, and trade up and down the *Ucayali*; and the *Shipibos*. The *Sencis* are a bold, warlike, and generous tribe. Three of the tribes are dwellers in the forests inland, and do not come down to the rivers, the *Remos*, *Amajuacas*, and *Capanahuas*. The *Cashibos* are incorrigibly savage. The *Manamabobos* are only mentioned by the older authorities, and are perhaps extinct. The *Mayorunas* occupy the country from the mouth of the *Ucayali* to the mouth of the *Yavari*, and are a very peculiar tribe. They have thick beards and white skins, and must be of mixed origin, but very little is known about them, as they are hostile to all strangers.

NAPO (700 miles).

Cofanes, Encabellados, Zaparos, Aguaricos, Anguterias, Orejones, Payaguas, Comuchiros, Cuiyacus, Anishiris, Maioames, Majanes, Oritos, Piojes, Rumos, Seños, Tamas, Yurusanes, Ninunas.

The River Napo and its tributaries have a special interest, because this was the scene of Gonzalo Pizarro's famous expedition in search of the land of

cinnamon, and because it is the locality whence Orellana started on the first descent down the River Amazons. There were populous tribes in the Napo Valley when it was first entered, and in the valley of its tributary the Aguarico. The *Cofanes*, specially mentioned by Montesinos, and numbering 50,000 in the early part of the seventeenth century, are now fast dwindling, and much reduced. In like case are the *Encabellados* and other Aguarico tribes. Four tribes mentioned by Acuña on the lower Napo, the *Rumos*, *Seños*, *Tamas*, and *Yurusanes*, are now nearly or quite extinct; so are the *Camachiros*, not mentioned since the publication of the Memoirs of the Viceroy, Gil Taboada y Lemos. The *Anguteros*, *Oritos*, and three branches of the *Zaparos* are cultivators. The *Zaparos*, divided into thirteen branches, appear now to be the most numerous and powerful tribe on the Napo, wandering between that river and the Pastasa. These *Zaparos* and the *Orejones* have physiognomies widely different from those of the nobler Amazonian tribes. Their faces are round, with oblique set eyes, flat noses, thick lips, and beardless.

BENI.

Apolistas, *Lucos* or *Mositenes*, *Chillinos*, *Marcanis*, *Maropas*, *Pamainos*,
Pariamas, *Saparunas*, *Wawayanas*.

MADRE DE DIOS.

Antis or *Campas*, *Chiponauas*, *Manosuyu*, *Manyaris*, *Pilcosones*, *Manuas*,
Chipanauas, *Sucumbios*, *Araonas* or *Caviñas*, *Arasas*, *Chunchos*, *Guarays*,
Atsahuaca *Guarays*, *Mascos*, *Tucanas*, *Yamiacas*.

These are the tribes at the bases of the Andes of Cuzco and La Paz, and along the Rivers Beni and Madre de Dios, to the junction with the Mamoré. On the upper waters of the Beni there are several half-civilised tribes collected in mission villages, such as the *Lecos* or *Mositenes* on the River Tipuani, the *Apolistas* in Apolobamba, the *Chillinos* and *Pamainos* in Capaulican, while the *Maropas* appear to belong to the great *Moros* family of tribes. Father Armentia has introduced us to four wild tribes of the Beni, the *Marcanis*, *Pariamas*, *Saporunas*, and *Wawayanas*.

The Indians of the Madre de Dios system have a history which is ancient and yet modern. We read of their conquest by the Incas more than four centuries ago, yet the rivers they frequent have only been explored within the last half century. The Inca Tupac Yupanqui invaded the eastern forests, reducing the *Manyaris* or *Yana-simis* ("black mouths"), the *Monsuyus*, and the more distant *Chipanauas*, while Ocampo (1571) mentions a fierce and treacherous tribe called *Pilcosones* to the north of the *Manyaris*.

In modern times we have the great tribe of *Campas* or *Antis* nearest to civilised districts on the Vilcamayu; and closely allied to them are the *Chunchos*, covering a vast area and divided into five, or including the *Arasas* of the Marcapata, into six divisions. Further down the Madre de Dios, and on the River Heath, are the *Guarayos*, reported to be a fierce and warlike tribe, said to be

descended from the Spaniards who went in search of the Gran Paytiti, and the *Araoanas* or *Carinas*. I am inclined to identify the *Manyaris* of Inca times with the *Campas*, the *Manosuyus* with the *Chunchos*, the *Chipananas* with the *Carinas*, and the *Pilcosones* with the *Cashibos*. The *Tacanas* inhabit the Madidi and lower part of the Madre de Dios, living exclusively on the river banks. Baron Erland Nordenskiöld has brought two other tribes to our notice, who inhabit the banks of rivers near the bases of the eastern Andes. The *Yuniacas* speak the Pana language, and frequent the Inambari River. The *Atsahuaca-Guarays* also belong to the Inambari, and between that river and the Tambopata. They speak the Pana language, but are not numerous.

MOXOS AND CHIQUITOS.

These great families of tribes, in the forests to the east of the Bolivian Andes, are now civilised and assembled in villages. The *Moxos* were reduced to submission by the Incas. The *Moxos* number upwards of 30,000 souls in fifteen mission villages. They are subdivided into twenty-six branches, all cultivators and breeders of stock. The *Chiquitos* are divided into forty different branches. They are also cultivators, and very efficient as craftsmen and weavers. They speak seven different dialects.

We have now glanced at 110 tribes living on rivers which have their sources on the Andes, and may be considered as more or less Andean. We next come to the dwellers on or near rivers which flow into the main stream of the Amazons from the north side, namely, the Japura, Putumayu, Rio Negro with the Rio Branco and Uaupés, and the Nhamunda where the Amazons dwelt.

PUTUMAYU.

Ariquenas, Atuais, Boras, Cionis, Cuiyajos, Cunas, Goahivas, Huitotos, Iças, Inganas, Muriates, Uaienumas, Ujaguas, Yacariguaras, Yurnnas, Zias or Ziyas.

Two of the Putumayu tribes, the *Atuais* and *Cunas*, are only mentioned by Acuña and may, therefore, be considered as extinct. The *Goahivas*, once on the Putumayu, are now a fast diminishing tribe in the plains of Casamare. The *Huitotos* are short, but a well formed race, stout and strong, and numbering 30,000. Their houses are large and circular, each holding seventy families. The *Boras* and *Cionis* are hostile tribes, allied to the *Huitotos*.

JAPURA (25).

Curetus, Passes, Abanas, Alarnas, Andoquius, Cauiaris, Cauzenes, Chituas, Curanis, Guaguas, Hivhinas, Miranhas, Mabius, Tumbiras, Mamangas, Marnuacas, Pamenuas, Mangeronas, Parauamas, Pariates, Uchanas, Yauanas, Yucunas, Mariaranas, Uacnambus.

Of most of these tribes of the Japura we have little or nothing more than the names from Martius or Penna. One of them is mentioned by Acuña. The

Curetas, between the Japura and Uaupés, are short but strong. They are cultivators, and live in villages consisting of circular huts with high conical roof. The *Passes*, according to Bates, are among the noblest of the Amazonian tribes. They have pleasing features, white skins, no beards, the nose finely formed and arched, and eyes open and bright. They are described as clever, gentle, and industrious, but they are now nearly extinct. The *Uaenambus* or "Humming Bird Indians," on the lower Japura, closely resemble the *Curetas*.

RIO NEGRO, RIO BRANCO, UAUPÉS.

Barres, *Uaupés*, *Arapassos*, *Araquizes*, *Arekainas*, *Popunanas*, *Marapitanas*, *Queianus*, *Tarumas*, *Agararis*, *Anaribas*, *Macunis*, *Parauanos*, *Paxianas*, *Vereuenes*, *Uapixanas*.

The tribes which settled down with the Portuguese, and eventually settled in the town of Barra, were the *Araquizes* and *Tarumas*. The *Barrés* on the head waters of the Rio Negro, and extending along the Cassiquiari to the Orinoco, appear to have been the most important of the Rio Negro tribes in Spruce's time. They then consisted of eight branches, and he describes them as absorbing other tribes. But the finest Indians were those of the *Uaupés* river, divided into twenty-eight branches. They are tall, stout, and well made, with jet black straight hair. Their houses are 115 feet long by 75 feet, and 38 feet high, holding many families. Their canoes made out of hollowed tree trunks are 40 feet long.

The lowest type of Indian is also met with along the banks of the Rio Negro. These are the *Macus*, who have no houses, no clothing, no settled habitations. Of the other Rio Negro and Rio Branco tribes, little has been told us.

NHAMUNDA.

The Nhamunda was the river up which the Amazons themselves were supposed to reside.

Aputas, *Cunuris*, *Guacaras*, *Tocarís*.

These four tribes lived on the Nhamunda, and the *Guacaras* are said to have had periodical intercourse with the Amazons.

The tributaries of the Amazons on the south side, which do not rise in the Andes, are the Yavari, Jutay, Jurua, Teffé, Purus, and Aquiry or Acre, Madeira, Mamoré, and Itenez, Tapajos, Xingu and Tocantins.

YAVARI.

Ayanataos, *Chaintos*, *Chimanas*, *Culinas*, *Curuamas*.

JUTAY.

Apanaris, *Bugis*, *Chibaras*, *Conomomas*, *Gemias*, *Guanarvus*, *Marianas*, *Maturuas*, *Mounas*, *Namas*, *Ozuanas*, *Tapaxanos*, *Tipunas*, *Toquedas*, *Urubus*.

JURUA.

Anhoarys, Aranas, Baibucuas, Baxiuaras, Canamaris, Utuquinas, Curranas, Oauanas, Coata Tapuijas, Coonas, Huahuatales, Marauas, Nruas, Palpumas, Parakus, Quibaanas, Saindurus, Tamares.

The names on the Yavari, Jutay, Jurua, and Teffé are given by Martius and Penna. The *Carcanas* and *Cauanas* are said to be tribes of dwarfs. The *Coata Tapuijas* are said to have short tails. The *Canamaris* are said to be cannibals, and to extend to the banks of the Purus. They use crowns of feathers, and are said to be cultivators.

TEFFÉ.

Coronas, Jamumas, Jaranas, Tamuanas, Xamas, Yupias.

PURUS AND AQUIRY.

Apurimas, Catanicas, Amumatis, Cotianas, Catauxis, Cipos, Cuchiguaras, Cumayaris, Cuxiuaras, Ipurinas, Irizus, Jamamaris, Mainaguas, Maneteneris, Mutuanis (A), Pammarys, Pomaris, Tiaris, Aquiris, Capechenes.

The chief tribes of the Purus, are the *Catauxis*, *Ipurinas*, and *Pammarys*. The *Maneteneris*; *Capechenes*, and *Cipus*, are also described by Chandless. The *Jamamaris* and *Capechenes* are inland tribes.

MADEIRA, MAMORÉ, ITENEZ.

Caripunas, Cangaparangos, Ita Tapuijas, Sanes, Yanaras, Chucobos, Houbarayos, Jacamis, Mobimas, Moimas, Aricoronas, Baures, Cautarias.

The *Baures*, on the Itenez, are settled in mission villages and are a branch of the *Moxos*. The *Caripunas*, near the falls of the Madeira, are said by Martius to be of Carib origin.

TAPAJOS.

Andrias, Apiacares, Arara, Curiates, Gurpindayas, Javipujus, Mambriaras, Mambiquares, Parauates, Parenis, Piriquitas, Suoriranas, Tapajosos, Tapanhouas, Uarapas.

XINGU.

Baccahirys, Curiates, Cuzares, Quaruares, Tacanhopes.

TOCANTINS.

Botacudos, Cabaros, Caishanas, Charentes, Cortys, Crans, Jacundus, Pochetys, Puchacus, Guajujas, Shumanas, Tacuhanos, Tapacoas, Tocantinas.

Besides the names of forty-eight tribes are given by Martius and Penna, as living on the tributaries of the above three Brazilian rivers and of the Mamoré.

A CONTRIBUTION TO THE ANTHROPOLOGY OF THE SUDAN.

BY A. WINIFRED TUCKER AND CHARLES S. MYERS.

[WITH PLATES XVIII, XIX.]

Historical.

THE accompanying map shows roughly the geographical position of the various tribes mentioned in this paper. They are for the most part scattered over a vast expanse of country stretching from about the centre of the Sudan to the White Nile. A few of them are distributed along the upper waters of the Blue Nile, but the majority dwell along the banks of the main stream south of Khartum, along the Sobat river valley and the numerous headwaters of the White Nile converging from the south and south-west at Lake No.

Little is known of the relations of these tribes to one another, and practically nothing of their individual histories, in spite of the fact that they have been in contact with more or less civilised peoples for the last 4,000 years. Our ignorance is attributed by travellers to the tendency of the Sudanese to break up into small tribes hostile to one another, which leads to so complete an obliteration of common traditions and relationships that the natives are able to give very little information about themselves.

Practically all we know from the natives themselves may be put in a very few words. The Jurawi claim relationship with the Shilluks.¹ The Dinkas also state that the Shilluks and the Jurawi are one, and that the Dinkas and the Nuers are one.² The Golo tribe assert² that they, the Bongawi and the Jurawi are from the same stock as the Azandeh peoples, chief of which are the Niam-Niam. If these several statements are correct the Jurawi must be a mixed tribe, which is by no means unlikely when we consider the incessant intermixing which must have taken place owing to flight from slave raiders and from conquering tribes. The Burunawi and Bertawi are also said to be connected.³

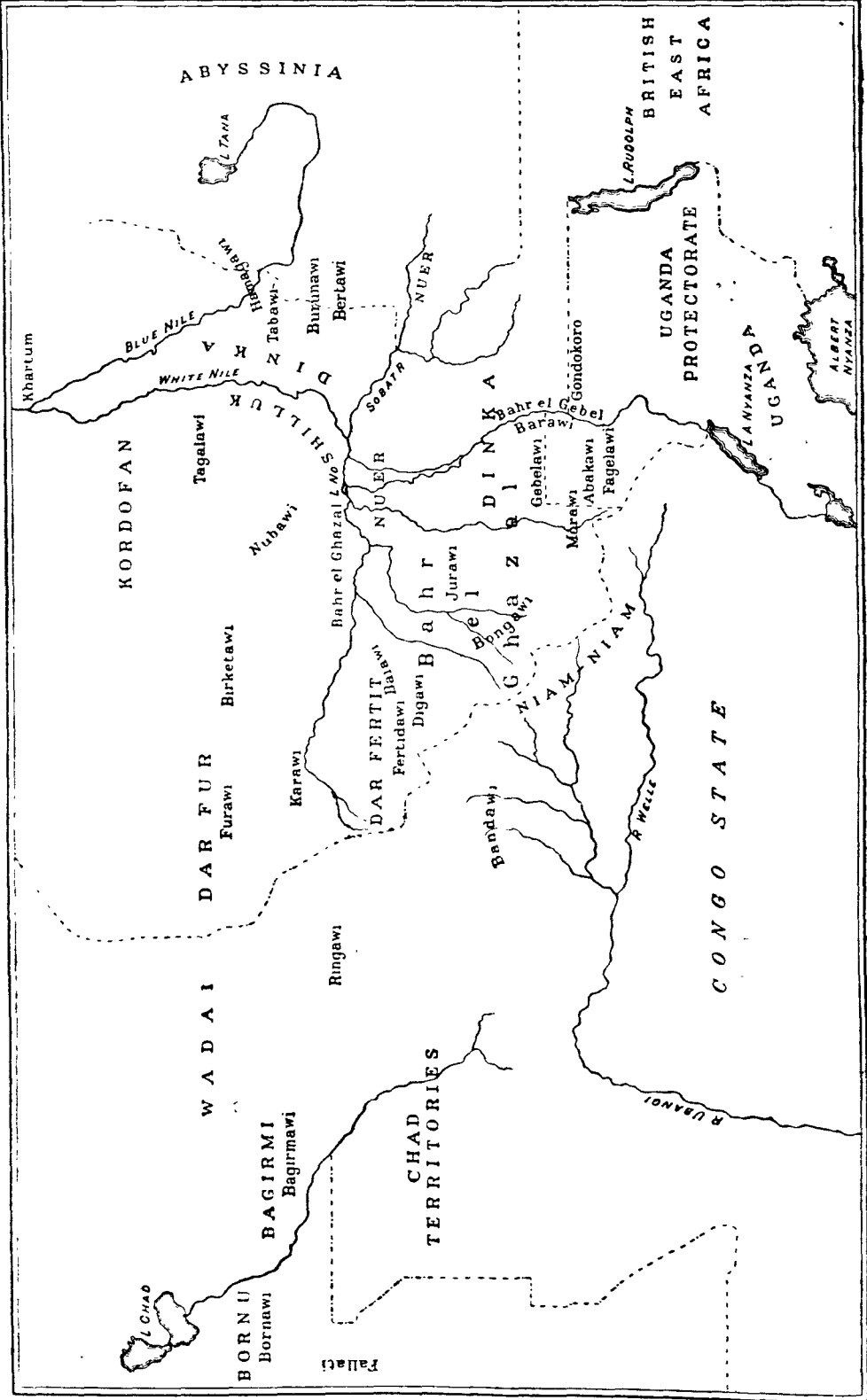
The native traditions afford us little help in determining how long the various tribes have occupied their present positions. The Dinka traditions allude only to mythical origins; they do not give any account of migrations, except in the case of the offshoot dwelling on the White Nile which left the main stock but about 150 years ago. The Shilluks on the other hand must have migrated very long ago, for in their traditions they repeatedly mention their wanderings, while they have a list of twenty-six kings who have reigned over them since they occupied their present home.⁴ Of the traditions of the other tribes nothing definite has so far been recorded.

¹ Schweinfurth, *The Heart of Africa* (Eng. Trans.), 1878, vol. i, p. 76.

² This information was contained in a letter written to one of us by Major S. Lyle Cummins, R.A.M.C.

³ Gleichen, *Anglo-Egyptian Sudan*, 1905, vol. i, p. 122.

⁴ Gleichen (*op. cit.*), pp. 197-199; *cf.* also "Notes on the Sudanese tribes of the White Nile," by Capt. Cummins, *Journ. Roy. Army Med. Corps*, Nov., 1904.



If we turn now to the travellers who have visited the tribes, one fact stands out clearly in all their accounts, and that is the remarkable difference existing between the Nilotic Negroes properly so called (*i.e.*, those living along the White Nile) and the tribes of the southern and western Bahr el Ghazal. Schweinfurth says, "Any traveller who has followed the course of the main sources of the White Nile into the heathen negro countries, and who has hitherto made acquaintance only with Shillooks, Nueir, and Dinka, will, on coming amongst the Bongo, at once recognise the commencement of a new series of races extending far onwards to the south. . . . The jet-black Shillooks, Nueir, and Dinka, natives of the dark alluvial flats, stand out in marked distinction to the dwellers upon the iron-red rocks, who (notwithstanding their diversity in dialect, in habit, or in mode of life) present the characteristics of a connected whole. Of this series the tribes which must be accounted the most important are the Bongo, the Mitto, the Niam-niam, and the Kredy."¹ Of the Bongos he states that they are to be regarded "as hardly removed from the lowest grade of the Brachycephalæ."² Keane makes the same distinction between a "black, often very tall and long-headed" type and the other "reddish or ruddy brown, more thick-set, and short-headed."³ Later, Cummins has drawn the same distinction, partly on sociological, partly on anthropological grounds.⁴

Under these conditions, it is obvious that we must rely chiefly on anthropometric data to find out the relations of the Sudanese tribes to one another. But only within recent years have any such data been available to serve as a basis for definite conclusions; Virchow was the first to obtain exact measurements of the living Sudanese. In 1879, he obtained measurements from a Dinka who was brought to Berlin in a troupe of so-called Nubians.⁵ In 1889, he measured four more,⁶ and in 1895 was able to get full data from a group of men, women, and children (45 in all), who went under the collective name of Dinkas.⁷ It was practically impossible to find out the exact tribes to which the different members of the group belonged, but 17 of the 21 whom he measured were dolichocephalic and all but one had a stature over 1·738m. Virchow states that the majority of the adult male Dinkas "do not possess the characteristic negro nose." In 1900, Girard⁸ published measurements made upon three Dinkas in Paris. The following figures give the means he obtained for the principal measurements. Stature 1·775m., cephalic index 69·27 (head length 197, head breadth 136mm.), nasal index 91·04, prognathism moderate, head capacity relatively small. By far the most extensive measurements on the tribes of the Sudan were made by Chantre in 1904.⁹

¹ *Loc. cit.*, vol. i, p. 115.

² *Ibid.*, p. 116.

³ *Man Past and Present*, 1899, pp. 76, 77.

⁴ *Loc. cit.*, pp. 2-3.

⁵ *Verh. Berl. Anthropol. Ges.*, 1879, pp. 388 ff.

⁶ *Ibid.*, 1889, p. 545.

⁷ *Ibid.*, 1895, p. 148.

⁸ *L'Anthropologie*, tome XI, 1900, p. 409 ff.

⁹ Chantre, *Recherches Anthropologiques en Egypte*, 1907. Since our paper was sent in for publication the Third Report of the Wellcome Research Laboratories at Khartum has appeared, which includes an account of some valuable anthropometric observations by the late Dr. Pirrie upon some 260 subjects belonging to twelve different tribes of the Sudan. To these results we are unfortunately able to refer only in footnotes.

His classification includes most of the tribes of which measurements are given in this paper, except those of the Blue Nile for which there are no previous data. His classification and data are here given for comparison ;

1. Nilotics (Shilluk, Dinka, Nuer).
2. Chadians (Baghirmi, Wadai, Fur).
3. Kanori-Bornu (Bornawi, Hausa).
4. Nubawi (Fertitawi, Tagalawi, Nubawi, Niam-niam, Bongawi, Mombuttu).

		Nilotics.	Chadians.	Kanori-Bornu.	Nubawi.
Cephalic index	...	73.46	75.00	74.48	75.53
Nasal index	...	105.00	104.76	100.00	102.44
Facial index	...	105.64	105.55	109.08	103.96
Stature	... ..	1.80m.	1.78m.	1.71m.	1.73m.

Present Material.

The anthropometric and other data published in the present paper were obtained by one of us during the early part of 1902 at Khartum and Omdurman. Few¹ as they are, they seem worthy of publication, considering our present ignorance of Sudanese anthropometry. The conditions under which the work was done, and the methods of procedure, have already been sufficiently described elsewhere.² Here we desire only to repeat the expression of our gratitude to the Sirdar and Governor-General for having permitted these observations to be made upon the Sudanese troops under his command, and to the Government Grants Committee of the Royal Society and the British Association for the Advancement of Science for the financial assistance rendered. We would add that all the measurements obtained, together with photographs and other data (shape, colour, texture, etc., of skin, hair, etc.), have been deposited at the Royal Anthropological Institute where they are available for further study.

The more important measurements and indices are given in Tables I and II. The tribes are placed in one or other of these tables according to the number of individuals in each tribe who were measured. Table I obviously affords more reliable information than Table II. To it we shall consequently first turn for an analysis of our data.

¹ The total number of subjects measured is 188, but we have had to eliminate from this number those whose parents do not belong to the same tribe.

² C. S. Myers, "Contributions to Egyptian Anthropology," *Journ. Roy. Anth. Inst.*, vol. xxxiii, 1903, pp. 82, 83, vol. xxxv, 1905, p. 82, vol. xxxvi, 1906, pp. 237-258, vol. xxxviii, 1908, pp. 103, 104.

TABLE I.

The following are the chief data for those tribes of which more than five individuals were measured :—

Tribe.	No.	Head Length.	Head Breadth.	Auricular Vertical Radius.	Horizontal Circumference.	Cephalic Index.	Nasal Index.	Radio-gnathic Index.	Upper Facial Index.
Dinka ...	17	191·06	138·70	145·83	538·71	72·71	98·99	111·27	46·23
		(6·92)	(5·47)	(3·95)	(16·75)	(3·58)	(8·53)	(3·44)	(2·71)
		—	—	—	—	± 0·59	± 1·40	—	± 0·44
Shilluk ...	11	193·40	138·54	141·40	548·30	71·70	93·32	110·96	47·12
		(4·71)	(4·14)	(2·15)	(11·20)	(2·93)	(8·95)	(3·27)	(2·39)
		—	—	—	—	± 0·60	± 1·82	± 0·98	± 0·49
Nubawi ...	20	189·15	143·90	142·30	535·00	76·18	101·18	109·89	45·68
		(6·40)	(5·64)	(5·37)	(13·60)	(4·19)	(5·89)	(4·32)	(2·40)
		—	—	—	—	± 0·61	± 0·89	± 0·84	± 0·36
Tagalawi	7	186·00	147·00	142·00	545·75	79·06	103·21	107·15	44·41
		(6·21)	(4·81)	(5·90)	(11·34)	(1·63)	—	—	—
		—	—	—	—	± 0·42	—	—	—
Furawi ...	18	190·70	141·94	140·18	541·60	74·39	102·63	109·90	45·10
		(3·40)	(4·48)	(3·08)	(9·36)	(3·09)	(7·68)	(4·60)	(1·88)
		—	—	—	—	± 0·49	± 1·22	± 0·90	± 0·30
Bertawi ...	8	186·38	141·37	138·00	529·00	75·86	101·29	107·03	46·14
		(5·60)	(3·57)	(2·24)	(2·15)	(3·13)	—	—	—
		—	—	—	—	± 0·74	—	—	—

The figures in the second column give the number of individuals measured in each tribe; those in the following columns give the mean values for the various measurements; the figures in brackets express the standard deviations¹ of the means, and those preceded by the sign \pm show the probable errors² of the means.

¹ The standard deviation (σ) is obtained from the expression $\sigma = \sqrt{\frac{\sum \delta^2}{n}}$ where n is the number of individual measurements and $\sum \delta^2$ is the sum of the squares of the differences of individual measurements from the mean.

² The probable error (p.e.) is found from the expression $p.e. = 0·6745 \frac{\sigma}{\sqrt{n}}$. Unfortunately the number of individual measurements is often so small that this constant cannot be satisfactorily calculated.

TABLE II.

Table II gives a list of the most important data obtained from members of other tribes. As there are mostly only one or two individuals from each tribe, no comparisons are possible, but the data may be useful for future comparison with those obtained by others.

Tribe.	No.	Head Length.	Head Breadth.	Auricular Vertical Radius.	Horizontal Circumference.	Cephalic Index.	Nasal Index.	Radio-gnathic Index.	Upper Facial Index.
Burunawi	1	178·00	138·00	—	—	77·52	105·62	—	41·60
Tabawi ...	1	179·00	131·00	—	—	73·18	94·73	—	43·51
Karawi ...	3	186·30	144·00	149·00	533·50	77·39	95·72	112·46	48·22
Birketawi	2	191·50	143·00	142·00	526·00	74·70	95·85	113·06	46·62
Baiawi ...	2	189·50	144·50	142·00	542·00	76·26	109·25	111·50	47·98
Niam-niam	1	194·00	147·00	138·00	557·00	75·77	102·32	115·16	44·68
Rungawi...	1	197·00	150·00	149·00	561·00	76·15	100·00	104·62	39·04
Nuerawi ...	1	188·00	136·00	136·00	536·00	72·34	80·00	108·18	49·30
Jurawi ...	1	190·00	138·00	—	—	72·64	105·00	—	46·56
Bagirmawi	1	188·00	144·00	140·00	532·00	76·59	93·47	109·70	50·37
Borgawi ...	1	184·00	136·00	131·00	519·00	73·92	95·12	105·82	42·54
Fallati ...	1	197·00	143·00	139·00	—	72·58	107·14	109·16	44·28
Gebelawi	4	191·00	141·50	—	538·00	74·11	101·09	—	47·75
Barawi ...	1	200·00	141·00	142·00	555·00	70·50	97·72	109·26	50·75
Fagelawi...	1	182·00	140·00	139·00	518·00	76·92	100·00	118·75	45·31
Abakawi...	1	196·00	142·00	145·00	554·00	72·45	89·37	112·38	47·88
Morawi ...	1	194·00	140·00	156·00	551·00	72·17	107·14	105·72	44·85
Fertitawi	4	187·00	147·25	137·00	530·00	78·76	103·34	110·08	43·66
Hamagawi	5	180·00	138·80	140·75	518·60	73·22	95·64	103·91	45·10
Bongawi ...	4	186·60	142·00	141·30	542·00	76·14	104·36	107·53	48·13
Bandawi...	4	192·50	149·25	145·60	551·00	77·53	103·99	109·59	46·42
Digawi ...	8	190·00	146·38	—	—	77·00	101·55	—	42·35
Bornawi ...	4	191·50	140·75	142·30	539·6	73·52	94·78	107·19	45·67

*Cephalic Index.*¹—The Shilluks have the lowest cephalic index (71·70) while the Tagalawi have the highest (79·06), the difference between these being 7·36

¹ For obvious reasons we exclude here from consideration the measurements given in Table II.

units. Now the probable error of the Shilluk index is ± 0.60 while that of the Tagalawi is ± 0.42 . Hence the probable error of the difference of the means¹ is ± 0.73 , which is far less than a quarter of the difference of the two means (7.36). Again, the difference between the means of the Shilluk and the Nubawi cephalic indices is 4.48, while the probable error of the difference of the two means is ± 0.85 , which again is far less than a quarter of the difference of the means. Thirdly, the mean cephalic index for the Shilluks differs from that of the Bertawi by 4.16, while the probable error of the difference of these means is ± 0.96 which is again less than a fourth of the found difference. These three differences, therefore, are with high probability not due to accident.²

On the other hand, the difference between the mean cephalic index for the Shilluks and the Dinkas is only 1.01, while the probable error of the difference is ± 0.48 ; and the difference between the mean cephalic index of the Nubawi and Furawi is 1.79, while the probable error of the difference is ± 0.78 . In each of these two cases the probable error of the difference is more than a quarter of the difference of the means. These differences cannot therefore be regarded as necessarily significant.

Comparing the mean cephalic indices of the Tagalawi and the Nubawi, of which the former are said to be a branch, we find that the difference of the two means is 2.88 while the probable error is ± 0.77 . The significance of this difference must hence be regarded as doubtful, an attitude which is justified when we come to consider the relations between the two tribes and the scanty figures from which the conclusion is drawn. The mean cephalic indices of the Bertawi and the Nubawi differ by 0.32 while the probable error of the difference is ± 0.96 .

From these figures we may legitimately conclude that the Shilluks and Dinkas are appreciably more dolichocephalic than any of the other Sudanese tribes for which we have adequate data; and that the differences between the Furawi and the Nubawi, together with those between the Bertawi and the Nubawi, are probably not significant. The number of subjects measured in other tribes (Table II) is too small to enable us to calculate differences, but we may note that the tribes in Dar Fertit (Fertitawi 78.76, Digawi 77.00) as well as those in the south-west Ghazal district (Bandawi 77.53, Bongawi 76.14) are likewise far more round-headed than the Nilotic Sudanese, while the Nuer and Jur, whose cephalic indices measure 72.34 and 72.64 respectively, agree very closely with their neighbours, the Dinkas and Shilluks.

Nasal Index.—The most divergent values for the mean nasal index in Table I are those for the Shilluks (93.32) and the Tagalawi (103.21). The difference is enormous and cannot be accidental in spite of the few observations made,

¹ The probable error of the difference of two means is the square root of the sum of the squares of the p.e. of the means.

² It is generally admitted that a difference acquires significance when it is more than four times its probable error.

especially when we find the nasal indices of the Nubawi and Furawi, who live in the same region as the Tagalawi, to be 101.18 and 102.63 respectively. Next to the Shilluks come their neighbours the Dinkas with a nasal index of 98.99. These indices differ by 5.67, but the probable error of this difference reaches ± 2.30 , a value relatively far too high for the difference to be with any probability significant.

The rest of the eastern Sudanese are far more platyrrhine than either the Dinkas or the Shilluks. The index of the Nubawi exceeds that of the Shilluks by 7.86 while the probable error of the difference between the two means is only ± 2.02 , so that the difference is with some probability significant. On the other hand, in the case of the Nubawi and Furawi these means differ only by 1.45, while the probable error is actually greater than this, ± 1.5 . If we compare these results with those obtained for the cephalic index, we find a correlation between less marked dolichocephaly and very marked platyrrhiny and between more marked dolichocephaly and less marked platyrrhiny.

Upper Facial Index.—This shows no great variation among the different tribes. The lowest is that of the Tagalawi, 44.41; while the highest is that of the Shilluk, 47.12. The values of the upper facial index seem to vary inversely with those of the cephalic and with those of the nasal index, a lower facial index going with a higher cephalic and nasal index, and a higher facial index with a lower cephalic and nasal index. At the one extreme we have the dolichocephalic, less platyrrhine, leptoprosopic Shilluk; at the other the mesaticephalic, more platyrrhine, chamaeprosopic Tagalawi.

Radio-gnathic Index.—This index expresses the relation between the auriculo-alveolar radius and the auriculo-nasal radius, a not very satisfactory measurement.¹

It is curious to find that the Shilluks and the Dinkas, though having narrower noses and longer faces than the Furawi and the Nubawi, are not less but perhaps more prognathous. In Table I the Bertawi have the lowest index, 107.03, while in Table II the Hamagawi, of which tribe the Bertawi are thought to be a branch, have an index as low as 103.91, which value is actually reached by the natives of Upper Egypt.² From our study of the cephalic, nasal, upper facial, and gnathic indices it seems probable that the tribes living on the banks of the Nile and its tributaries (*e.g.*, the Shilluks and the Dinkas) are more dolichocephalic, less platyrrhine, more leptoprosopic, and perhaps more prognathous, than the south-western Bahr el Ghazal tribes (Bongawi, Fertitawi, Niam-niam), the tribes of Dar Fur and Dar Nuba, or those of the Blue Nile.

Stature.—In the following table the average stature of the chief tribes is given, with the number measured in each tribe :—

¹ To make the index significant it is necessary to know the size of the angle enclosed by the two linear measurements on which the index is based. See *Man*, vol. iii, 1903-4, pp. 12, 13.

² Cf. *Journ. Ry. Anth. Inst.*, 1906, vol. xxxvi, p. 239.

TABLE III.

Tribe.	No.	Stature.	Tribe.	No.	Stature.
Shilluks	11	1·777 m.	Bertawi	8	1·666 m.
Nubawi	20	1·735	Tagalawi	7	1·659
Dinkas	17	1·727	Furawi	18	1·653
Bandawi	4	1·701	Fertitawi	4	1·638
Bongawi	4	1·691	Niam-niam	1	1·627
Hamagawi	5	1·677			

We note the relative tallness of the Dinkas, Shilluks and Nubawi as compared with the Blue Nile tribes and the tribes of the S.W. Ghazal.¹

As far as these various data permit us to draw any conclusions it would seem that the Nubawi and Furawi with their respective branches, the Tagalawi and Birketawi, are very closely related, a conclusion to which Keane was also drawn in his study of the Sudanese tribes. In fact he says,² "from Kordofan . . . they (*i.e.*, the Nubawi) spread west to Dar Fur and Wadai where they are now represented by the Furs, Kunjaras, and the Tynjurs." From our data it would also appear that the southern tribes are relatively broad-headed, *e.g.*, the Bongawi have a cephalic index of 76·14, the Niam-niam one of 75·77, the Fertitawi one of 78·76, and as Table III shows are shorter than the true Nilotic Negroes.³ In fact, it seems that the extreme dolichocephaly which is usually associated with the Sudanese tribes is confined to the region of the White Nile (and perhaps to the S.E. Ghazal), the tribes further south and in Dar Nuba and Dar Fur being more or less mesati-cephalic.

For comparison the tribes have been arranged in Table IV according to their habitats, and from this the same general results *inter alia* appear.

¹ Dr. Pirrie's measurements of the stature of the Shilluks confirm our results, in contrast to Schweinfurth's statement (*op. cit.* vol. i, p. 17) that they are of "very moderate" height. On the other hand, according to Dr. Pirrie, the Nubawi are not so tall, their position in his table being close to the Furawi, whom they closely resemble in other physical measurements.

² *Man Past and Present*, 1899, p. 73.

³ Excluding tribes in which only one representative was measured, we find a remarkable agreement between the late Dr. Pirrie's results and our own, so far as the cephalic index is concerned thus :

	Dinkas	Shilluks	Nubawi	Furawi	Fertitawi	Bongawi	Gebelawi
Dr. Pirrie's results	72·8	71·4	75·9	75·0	78·3	76·7	76·3
Our Own results	72·7	71·7	76·2	74·4	78·8	76·1	74·1

The other data, however, often show considerable divergence, due, no doubt, in great part to individual differences in taking the same measurements.

TABLE IV.—I. NILOTICS.

Tribe.	No.	C.I.	N.I.	U.F.I.	R.G.I.
Dinkas	17	72·71	98·99	46·23	111·27
Shilluks	11	71·70	93·32	47·12	110·96
Nuers	1	72·34	80·00	49·30	108·18
Jurs	1	72·64	105·00	46·56	—
Average of tribes	...	72·35	94·32	47·30	110·14

TABLE IV.—II. DAR FUR AND DAR NUBA.

Tribe.	No.	C.I.	N.I.	U.F.I.	R.G.I.
Nubawi	20	76·18	101·18	45·68	109·89
Birketawi	2	74·70	95·85	46·62	113·06
Tagalawi	7	79·06	103·21	44·41	107·15
Furawi	18	74·39	102·63	45·10	109·90
Karawi	3	77·39	95·72	48·22	112·46
Average of tribes	...	76·34	99·72	46·01	110·49

TABLE IV.—III. DAR FERTIT AND S.W. BAHR EL GHAZAL.

Tribe.	No.	C.I.	N.I.	U.F.I.	R.G.I.
Fertitawi... ..	4	78·76	103·34	43·66	110·08
Rungawi	1	76·15	100·00	39·04	104·62
Digawi	8	77·00	101·55	42·35	—
Baiawi	2	76·26	109·25	47·98	111·50
Bongawi	4	76·14	104·36	48·13	107·53
Bandawi	4	77·53	103·99	46·42	109·59
Niam-niam	1	75·77	102·32	44·68	115·16
Average of tribes	...	76·80	103·54	44·61	109·74

TABLE IV.—IV. S.E. BAHR EL GHAZAL.

Tribe.	No.	C.I.	N.I.	U.F.I.	R.G.I.
Morawi ...	1	72·17	107·14	44·85	105·72
Abakawi ...	1	72·45	89·37	47·88	112·38
Fagelawi ...	1	76·92	100·00	45·31	118·75
Barawi ...	1	70·50	97·72	50·75	109·26
Gebelawi ...	4	74·11	101·09	47·75	—
Average of tribes	...	73·23	99·06	47·31	111·53

TABLE IV.—V. BLUE NILE TRIBES.

Tribe.	No.	C.I.	N.I.	U.F.I.	R.G.I.
Hamagawi ...	5	73·22	95·64	45·10	103·91
Tabawi ...	1	73·18	94·73	43·51	—
Bertawi ...	8	75·86	101·29	46·14	107·03
Burunawi...	1	77·52	105·62	41·60	—
Average of tribes	...	74·95	99·32	44·09	105·48

TABLE IV.—VI. LAKE CHAD TRIBES.

Tribe.	No.	C.I.	N.I.	U.F.I.	R.G.I.
Borgawi ...	1	73·92	95·12	42·54	105·82
Bornawi ...	4	73·52	94·78	45·67	107·196
Fallati ...	1	72·58	107·14	44·28	109·16
Bagirmawi ...	1	76·59	93·47	50·37	109·70
Average of tribes	...	74·15	97·62	45·71	107·97

*Non-numerical characters.*¹—One or two interesting points may be mentioned in connection with these data. The eyes of all the individuals measured are very dark brown, and in many cases there is a ring of pigment more or less complete around the iris. The eyes are as a rule large and among the Shilluks and Nubawi there are one or two cases of oblique axes. The distance between the two eyes is often considerable, and as the photographs show, this is more marked when the nose root is depressed.

The hair on the head is in all cases spiral and black, but the White Nile tribes are smoother faced than the western Bahr el Ghazal tribes. This comes out very clearly from the photographs.

The shape of the head from above and behind varies in different tribes, *e.g.*, of the Shilluks and the Dinkas only 27·3 per cent. and 23·3 per cent. respectively have ellipsoid heads when viewed from above, while of the Nubawi and the Furawi 42·5 per cent. and 46·9 per cent. have that shape. The Dinkas have for the most part extremely ovoid heads.

The forehead varies considerably in prominence, in all of the tribes the proportion of markedly retreating and markedly prominent foreheads being approximately equal for the different tribes. The chin tends to be feeble among the Bertawi, the Shilluks, and the Dinkas, while the Furawi have a large percentage of moderate chins (67·6 per cent.) and the four Hamagawi measured also have good chins. The Shilluks have by far the thickest lips, as many as 45 per cent. being classed as "negroid." The Furawi on the other hand are comparatively thin-lipped, 17 per cent. being classed as negroid, 56 as thick, while 27 per cent. are "medium." The other tribes have thick lips, but not the extreme "negroid" form.

The skin colour varies from very dark brown, almost black, to a bright copper tinge, but these differences are found in one and the same tribe.

General Summary.

1. The tribes measured may be divided geographically into six groups:—(i) Tribes of the White Nile (Nilotics), *e.g.*, Dinkas, Shilluks, Jurs; (ii) Tribes of Dar Nuba and Dar Fur, *e.g.*, Nubawi, Tagalawi, Furawi, Karawi; (iii) Tribes of Dar Fertit and the S.W. Bahr el Ghazal, *e.g.*, Fertitawi, Digawi, Niam-niam; (iv) Tribes of the S.E. Bahr el Ghazal, *e.g.*, Morawi, Barawi, Gebelawi; (v) Tribes of the Blue Nile, *e.g.*, Hamagawi, Bertawi, Burunawi; (vi) Tribes of Lake Chad, *e.g.*, Bornawi, Fallati, Bagirmawi.

2. This geographical classification serves, on the whole, as a useful basis for deductions from anthropometric material.

¹ The present material, drawn from regiments quartered at Khartum and Omdurman, is obviously unsuited to the study of tribal peculiarities of *coiffure*, dental extraction, cutaneous scarring and the like. Of the scars met with on the face, we may observe that some had been made "against illness," a few were declared to be the custom of the tribe, but the majority had been inflicted by Arab slave-masters of the past, the mark apparently varying with the tribe of the Arab slave-owner.

3. There is a striking agreement in the physical characters of the first and fourth and in the fifth and sixth of these groups; and there is a well-marked contrast in the physical characters of the first and second groups, and in those of the third and fourth groups.

4. The cephalic index varies in different parts of the Sudan, the White Nile tribes and those of the S.E. Ghazal being most dolichocephalic, while the tribes of Dar Fur, Dar Nuba, Dar Fertit and those in the S.W. Ghazal are mesaticephalic. The tribes of the Blue Nile and of Lake Chad are intermediate between these extremes.

5. The nasal index varies as a rule with the cephalic index, a relatively narrower nose going with a narrower head and a relatively broader nose with a broader head.

6. The upper facial index does not vary much, but it tends to decrease as the cephalic index increases, that is, the face tends to be broader when the head is broader.

7. The radio-gnathic index is highest among the tribes of the White Nile, lowest among the tribes of the Blue Nile and of Lake Chad.

8. The stature decreases from north to south. The tribes of the Blue Nile are relatively short.

9. The colour of the eyes and the type of hair remain constant throughout the Sudanese tribes.

10. No great differences in skin colour among the different tribes appear to exist.

11. The head is far more ellipsoid among the White Nile tribes than among any of the other tribes.

12. The forehead, chin, and lips vary considerably in all the tribes.

APPENDIX.

The following tables give the more important measurements. A complete list of the data sought for has been already published¹; it need not be repeated here :—

¹ *Journal Anthropol. Inst.*, 1903, vol. xxxiii, pp. 82, 83; 1906, vol. xxxvi, p. 237.

LIST OF

Tribe.	Subject Number.	3	4	5	6	7	8	9	10	11	12	13	14	15
Abakawi ...	2134	1798	1636	1554	—	—	—	—	—	—	142	196	68	113
Bagirmawi ...	2022	—	—	—	—	—	—	—	—	—	144	188	67	114
Baiawi ...	2047	—	—	—	—	—	—	—	—	—	142	190	64	111
" ...	2105	1700	—	—	—	—	—	—	—	—	147	189	67	116
Bandawi ...	2104	1722	—	—	—	—	—	—	—	—	147	188	60	106
" ...	2127	—	—	—	—	—	—	—	—	—	150	193	—	121
" ...	2160	1720	—	—	—	—	—	—	—	—	144	191	70	117
" ...	2173	1662	—	—	—	—	—	—	—	—	156	198	59	103
Barawi ...	2073	1805	1662	1565	1490	1130	863	1050	505	62	141	200	68	116
Birketawi ...	2043	1673	1550	1445	1380	1063	790	920	470	65	140	186	68	113
" ...	2184	1723	—	—	—	—	—	—	—	—	146	197	58	107
Bertawi ...	2005	—	—	—	—	—	—	—	—	—	137	195	62	108
" ...	2008	—	—	—	—	—	—	—	—	—	140	183	60	107
" ...	2031	1745	—	—	—	—	—	—	—	—	138	189	67	109
" ...	2054	—	—	—	—	—	—	—	—	—	141	193	65	115
" ...	2060	—	—	—	—	—	—	—	—	—	142	186	61	104
" ...	2078	—	—	—	—	—	—	—	—	—	139	176	57	104
" ...	2136	1660	1525	1430	—	—	—	—	—	—	147	185	58	110
" ...	2177	1593	—	—	—	—	—	—	—	—	147	184	68	116
Bongawi ...	2029	—	—	—	—	—	—	—	—	—	138	187	64	110
" ...	2108	—	—	—	—	—	—	—	—	—	143	179	67	112
" ...	2110	1746	1606	1510	1405	1070	785	930	478	53	145	194	65	116
" ...	2123	1636	—	—	—	—	—	—	—	—	—	—	—	—
Borgawi ...	2027	1504	—	—	—	—	—	—	—	—	136	184	57	104
Bornawi ...	2018	—	—	—	—	—	—	—	—	—	144	186	61	107
" ...	2023	—	—	—	—	—	—	—	—	—	143	197	60	108
" ...	2074	1558	1428	1340	1275	983	740	855	432	55	134	190	57	104
" ...	2169	1763	—	—	—	—	—	—	—	—	142	193	64	110
Burunawi ...	2007	—	—	—	—	—	—	—	—	—	138	178	55	99
Digawi ...	2024	—	—	—	—	—	—	—	—	—	150	194	61	102
" ...	2036	—	—	—	—	—	—	—	—	—	148	195	65	104
" ...	2041	—	—	—	—	—	—	—	—	—	133	178	56	105
" ...	2048	—	—	—	—	—	—	—	—	—	143	183	66	112
" ...	2122	1656	1505	1416	1322	1000	745	888	460	50	162	201	65	110
" ...	2161	1646	—	—	—	—	—	—	—	—	143	187	56	101
" ...	2167	1646	—	—	—	—	—	—	—	—	145	189	66	114

MEASUREMENTS.

16	17	19	22	24	25	26	27	28	29	30	31	32	33	34	35	44
111	142	104	106	32	42	47	117	554	347	145	134	105	118	137	125	—
110	133	103	101	33	43	46	113	532	334	140	125	103	113	122	123	—
113	134	93	105	—	49	43	120	—	—	145	131	106	116	123	120	—
108	139	105	—	41	46	44	129	542	340	139	122	103	117	128	123	—
106	139	111	99	35	47	42	111	536	352	145	125	100	111	125	126	—
118	146	110	—	—	38	45	—	—	—	—	—	—	—	—	—	—
109	132	107	107	37	46	49	123	—	—	146	133	110	118	140	122	1820
112	137	98	109	38	44	35	121	566	375	146	125	105	116	124	126	1735
113	134	98	99	34	43	44	117	555	342	142	128	108	118	131	126	1885
109	136	98	102	37	41	46	117	526	335	138	131	108	120	128	116	1810
104	134	102	106	36	40	39	121	—	—	146	128	100	115	128	128	1800
—	133	98	101	—	40	44	114	—	—	—	—	—	—	—	—	—
108	127	104	96	—	43	40	113	—	—	—	—	—	—	—	—	—
122	133	105	102	35	42	44	117	528	326	138	129	105	114	124	126	1805
105	137	109	101	38	38	45	114	—	—	139	132	104	106	124	—	—
104	131	103	—	—	41	42	—	—	—	135	125	98	110	122	118	—
121	133	105	101	37	43	36	111	—	—	138	129	102	106	118	118	—
117	142	115	107	35	45	36	113	532	347	142	123	101	113	140	117	—
114	144	103	108	37	36	40	120	527	326	136	127	102	110	128	111	1690
112	132	105	110	36	47	44	119	532	337	144	132	105	117	129	113	—
110	132	98	98	37	45	48	115	—	—	139	124	105	113	129	113	—
113	144	113	109	38	45	40	125	552	355	141	138	113	117	138	113	1880
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1780
106	134	100	100	33	39	41	112	519	315	131	120	103	109	123	118	—
104	129	89	101	37	38	43	108	533	329	139	124	103	109	124	120	—
105	135	102	104	39	40	44	113	553	345	149	133	105	112	126	129	—
104	132	103	102	36	38	41	115	533	325	139	122	99	108	122	120	1620
112	134	—	—	—	45	42	—	—	—	—	—	—	—	—	—	—
103	132	106	—	—	41	39	—	—	—	—	—	—	—	—	—	—
125	145	109	108	36	44	41	121	563	362	155	137	111	113	130	122	—
103	134	97	101	37	41	43	119	—	—	—	—	—	—	—	—	—
—	128	—	—	—	40	37	—	—	—	—	—	—	—	—	—	—
119	138	94	103	—	41	44	117	—	—	145	129	105	120	128	123	—
115	147	109	108	38	48	47	122	588	376	154	135	106	119	123	134	1815
114	141	99	105	35	42	37	121	—	—	—	122	99	111	127	119	1780
108	137	101	104	40	39	43	120	—	—	—	—	—	—	—	—	—

LIST OF MEASURE-

Tribe.	Subject number.	3	4	5	6	7	8	9	10	11	12	13	14	15
Digawi	.. 2186	—	—	—	—	—	—	—	—	—	147	193	68	116
Dinkawi	... 2002	—	—	—	—	—	—	—	—	—	133	187	61	111
"	... 2019	—	—	—	—	—	—	—	—	—	133	199	60	108
"	... 2045	1637	—	—	—	—	—	—	—	—	138	192	60	106
"	... 2063	1768	—	—	—	—	—	—	—	—	146	176	61	108
"	... 2069	—	—	—	—	—	—	—	—	—	133	189	58	107
"	... 2075	—	—	—	—	—	—	—	—	—	150	196	65	110
"	... 2102	1713	—	—	—	—	—	—	—	—	148	200	70	119
"	... 2144	—	—	—	—	—	—	—	—	—	140	192	65	114
"	... 2150	1775	—	—	—	—	—	—	—	—	136	193	60	106
"	... 2151	1763	1626	1527	1440	1090	798	980	520	58	136	190	67	115
"	... 2153	1725	1583	1493	1433	1087	805	964	500	58	140	191	65	117
"	... 2154	1638	—	—	—	—	—	—	—	—	141	181	53	92
"	... 2156	1705	—	—	—	—	—	—	—	—	137	196	53	96
"	... 2163	1761	—	—	—	—	—	—	—	—	133	184	59	104
"	... 2170	1713	1572	1495	1394	1073	812	936	475	48	131	183	57	100
"	... 2175	1807	—	—	—	—	—	—	—	—	141	203	67	116
"	... 2185	—	—	—	—	—	—	—	—	—	143	196	58	101
Jurawi	... 2119	1809	—	—	—	—	—	—	—	—	138	190	61	104
Fagelawi	... 2077	1670	—	—	—	—	—	—	—	—	140	182	58	94
Fallati	... 2066	—	—	—	—	—	—	—	—	—	143	197	62	109
Fertitawi	... 2044	1582	—	—	—	—	—	—	—	—	146	182	58	102
"	... 2137	—	—	—	—	—	—	—	—	—	152	188	60	106
"	... 2146	—	—	—	—	—	—	—	—	—	146	189	59	105
"	... 2152	1694	—	—	—	—	—	—	—	—	145	189	67	116
Furawi	... 2004	—	—	—	—	—	—	—	—	—	149	192	58	104
"	... 2025	—	—	—	—	—	—	—	—	—	140	188	59	104
"	... 2065	1642	—	—	—	—	—	—	—	—	143	183	60	106
"	... 2076	1629	1495	1400	1332	1020	755	880	450	65	143	186	59	106
"	... 2103	1653	—	—	—	—	—	—	—	—	144	191	60	104
"	... 2115	1672	1531	1450	1351	1050	780	885	450	67	151	190	60	106
"	... 2116	1665	—	—	—	—	—	—	—	—	141	191	64	108
"	... 2120	1650	1518	1426	1327	1020	740	905	465	60	136	195	61	110
"	... 2141	—	—	—	—	—	—	—	—	—	143	195	64	108
"	... 2145	—	—	—	—	—	—	—	—	—	141	197	65	111
"	... 2147	1669	1538	1457	—	—	—	—	—	—	133	191	58	101
"	... 2155	1727	1573	1490	1393	1090	797	927	488	58	139	194	61	112

MENTS—continued.

16	17	19	22	24	25	26	27	28	29	30	31	32	33	34	35	44
112	140	104	107	36	48	47	120	—	—	—	—	—	—	—	—	—
108	131	98	94	34	41	39	105	525	345	151	136	103	111	128	117	—
118	130	103	101	32	39	41	114	—	—	152	135	104	115	121	134	—
106	130	96	99	36	42	39	111	537	347	145	125	100	113	117	127	1725
108	135	97	99	33	39	42	107	—	—	138	120	99	113	128	111	1890
103	126	104	—	—	40	38	—	—	—	—	—	—	—	—	—	—
116	138	93	102	34	40	42	120	—	—	148	131	108	118	123	120	—
116	138	105	111	40	39	45	129	565	352	145	131	110	118	123	130	—
109	133	—	103	32	38	45	119	—	—	—	—	—	—	—	—	—
101	132	105	99	35	43	40	110	—	—	148	127	102	115	126	123	1930
109	134	91	98	33	45	43	113	528	333	141	123	104	124	135	115	1928
107	134	96	107	32	41	43	113	540	332	143	129	103	117	132	123	1870
96	125	95	95	31	41	37	105	—	—	—	—	—	—	—	—	—
107	135	96	103	32	40	36	120	—	—	—	—	—	—	—	—	—
103	127	99	104	34	37	37	111	—	—	147	127	100	110	116	119	1865
101	126	98	98	31	39	39	115	516	322	143	128	98	104	124	117	1830
116	139	99	107	34	43	44	122	560	352	149	133	104	116	132	129	1880
101	133	99	—	—	35	42	—	—	—	—	—	—	—	—	—	—
104	131	91	—	—	42	40	—	—	—	—	—	—	—	—	—	—
110	128	85	96	33	38	38	110	518	335	139	123	96	114	126	120	1700
109	140	98	101	38	45	42	115	—	—	139	131	109	119	128	120	—
114	139	97	100	36	42	36	114	530	337	137	130	106	115	122	110	1655
114	141	—	—	—	42	40	—	—	—	—	—	—	—	—	—	—
114	140	103	—	—	44	42	—	—	—	—	—	—	—	—	—	—
115	139	105	101	—	40	46	114	—	—	—	125	103	115	134	123	1910
119	133	101	98	34	47	40	113	560	350	—	—	—	—	—	—	—
105	131	101	97	31	38	39	109	532	332	138	128	106	111	125	127	—
107	135	96	99	31	40	42	113	—	—	139	121	102	119	130	114	—
106	136	101	100	32	36	39	111	532	340	144	127	100	108	125	114	1770
110	130	100	102	34	41	40	118	546	335	138	128	102	118	128	125	—
116	142	102	107	40	47	42	123	552	337	147	128	104	111	121	127	1710
112	138	108	—	—	44	39	—	—	—	—	—	—	—	—	—	—
110	135	99	97	35	43	40	113	541	342	143	132	106	112	124	123	1785
120	141	108	111	37	42	44	125	—	—	—	—	—	—	—	—	—
105	133	103	97	34	38	42	111	—	—	—	—	—	—	—	—	—
109	132	95	105	36	38	38	116	531	325	138	125	103	113	119	116	1785
112	132	106	106	34	39	39	116	544	—	—	122	102	109	125	120	1787

LIST OF MEASURE-

Tribes.	Subject Number.	3	4	5	6	7	8	9	10	11	12	13	14	15	
Furawi	...	2158	1650	1522	1432	1352	1063	783	888	453	58	137	190	61	104
"	...	2168	1555	—	—	—	—	—	—	—	—	140	186	61	100
"	...	2181	1740	—	—	—	—	—	—	—	—	143	191	65	113
"	...	2182	1630	—	—	—	—	—	—	—	—	143	189	65	112
"	...	2183	1605	—	—	—	—	—	—	—	—	150	194	59	101
"	...	2188	—	—	—	—	—	—	—	—	—	139	191	61	100
Gebelawi	...	2017	—	—	—	—	—	—	—	—	—	132	192	63	106
"	...	2051	—	—	—	—	—	—	—	—	—	149	190	63	109
"	...	2148	—	—	—	—	—	—	—	—	—	142	191	70	113
"	...	2164	—	—	—	—	—	—	—	—	—	143	191	62	101
Hamagawi	...	2067	1723	—	—	—	—	—	—	—	—	143	175	62	107
"	...	2109	1689	—	—	—	—	—	—	—	—	137	178	61	107
"	...	2129	1717	—	—	—	—	—	—	—	—	136	190	58	104
"	...	2143	1682	1543	1453	1368	1035	758	925	470	50	141	184	60	109
"	...	2166	1575	—	—	—	—	—	—	—	—	137	173	64	109
Karawi	...	2114	1741	1589	1490	1385	1067	790	923	487	53	141	194	67	110
"	...	2117	1718	—	—	—	—	—	—	—	—	145	185	66	113
"	...	2172	1590	1450	1345	1275	975	763	827	432	58	146	180	71	121
Morawi	...	2133	1745	1603	1522	1430	1090	790	980	512	60	140	194	61	108
Nubawi	...	2003	—	—	—	—	—	—	—	—	—	144	197	61	108
"	...	2006	—	—	—	—	—	—	—	—	—	149	198	67	110
"	...	2028	—	—	—	—	—	—	—	—	—	138	187	60	103
"	...	2034	—	—	—	—	—	—	—	—	—	151	177	59	107
"	...	2050	—	—	—	—	—	—	—	—	—	146	190	65	111
"	...	2056	1776	1642	1558	1438	1087	815	1000	551	63	139	194	67	114
"	...	2057	—	—	—	—	—	—	—	—	—	139	188	61	109
"	...	2059	—	—	—	—	—	—	—	—	—	150	193	63	107
"	...	2062	1738	—	—	—	—	—	—	—	—	138	183	59	108
"	...	2070	—	—	—	—	—	—	—	—	—	157	181	63	108
"	...	2071	—	—	—	—	—	—	—	—	—	142	202	61	107
"	...	2072	1693	1550	1458	1390	1080	807	930	468	60	151	195	58	103
"	...	2079	—	—	—	—	—	—	—	—	—	143	194	64	110
"	...	2100	1803	1670	1576	1460	1143	858	995	520	53	144	182	63	108
"	...	2111	1740	—	—	—	—	—	—	—	—	142	186	67	117
"	...	2124	1747	—	—	—	—	—	—	—	—	132	188	59	106
"	...	2132	1615	1473	1384	—	—	—	—	—	—	144	189	64	112
"	...	2174	1643	—	—	—	—	—	—	—	—	144	179	66	107
"	...	2180	1745	—	—	—	—	—	—	—	—	146	191	67	114

MENTS—continued.

16	17	19	22	24	25	26	27	28	29	30	31	32	33	34	35	44
109	132	98	101	30	41	38	110	537	323	136	128	102	115	126	118	1765
106	132	93	—	—	41	39	—	—	—	—	—	—	—	—	—	—
114	139	103	106	33	43	44	117	—	—	138	123	104	121	136	121	1900
113	141	103	110	39	41	43	127	—	—	140	122	108	122	132	117	1730
111	147	102	104	38	43	38	118	—	—	141	133	111	114	129	128	1720
106	134	107	104	35	42	40	120	—	—	—	—	—	—	—	—	—
—	127	—	—	—	38	41	—	—	—	—	—	—	—	—	—	—
106	145	103	107	—	40	43	121	—	—	—	—	—	—	—	—	—
107	132	95	100	35	49	45	111	538	350	—	—	—	—	—	—	—
111	138	102	106	35	45	41	119	—	—	—	—	—	—	—	—	—
104	131	99	96	31	42	46	105	—	—	144	128	97	99	109	124	—
117	137	107	102	34	40	44	120	500	324	138	123	105	113	128	110	—
115	141	107	105	39	41	38	114	530	340	140	130	104	110	128	125	1910
112	132	108	106	34	37	42	121	526	335	141	131	107	105	123	115	1805
113	136	112	100	34	43	43	—	—	—	—	127	106	107	116	111	1735
113	140	99	102	37	42	47	125	542	365	154	135	108	120	130	132	1825
119	140	100	—	—	44	45	—	—	—	—	—	—	—	—	—	—
109	143	103	109	36	42	42	119	525	348	144	124	102	116	124	125	1655
110	136	100	105	37	45	42	118	551	360	156	139	105	111	128	131	1900
115	139	103	101	36	45	42	118	556	351	—	—	—	—	—	—	—
120	136	104	—	—	41	45	—	—	—	—	—	—	—	—	—	—
111	132	93	102	—	45	40	116	—	—	—	—	—	—	—	—	—
104	136	99	105	37	42	42	118	527	343	145	128	103	109	120	117	—
119	146	108	109	—	45	47	122	—	—	139	129	109	115	120	126	—
112	138	102	95	33	45	44	105	540	340	141	130	105	127	138	122	1920
109	134	100	95	31	41	40	109	—	—	145	127	99	107	118	127	—
115	140	103	—	—	45	45	—	—	—	—	—	—	—	—	—	—
102	131	94	102	31	42	41	112	—	—	147	130	107	113	117	118	1800
120	142	105	103	35	45	46	116	—	—	145	126	104	112	125	123	—
109	136	100	100	36	40	42	118	—	—	135	132	108	114	131	123	—
123	147	98	109	38	46	41	123	551	345	148	129	107	116	129	126	1815
123	140	103	—	—	44	44	114	—	—	144	129	105	119	139	123	—
111	141	96	100	31	45	45	117	528	343	143	129	103	112	124	113	1880
113	135	—	98	34	46	44	113	531	—	—	127	105	115	137	125	—
108	132	93	99	31	45	41	112	526	325	138	123	98	111	123	121	1850
111	137	108	105	35	39	40	118	543	350	150	132	106	117	128	118	—
103	131	106	100	32	39	42	122	513	330	—	—	—	—	—	—	1715
116	143	103	107	35	40	42	124	—	—	130	119	103	119	139	116	1900

LIST OF MEASURE-

Tribe.	Subject Number.	3	4	5	6	7	8	9	10	11	12	13	14	15
Nubawi ...	2187	—	—	—	—	—	—	—	—	—	139	189	64	110
Nuerawi ...	2101	1788	1660	1575	1480	1133	836	995	528	58	136	188	70	111
Niam-niam	2101	1627	1497	1403	1325	1010	747	893	450	50	147	194	63	106
Ringawi ...	2033	1715	—	—	—	—	—	—	—	—	150	197	57	106
Shilluks ...	2010	—	—	—	—	—	—	—	—	—	134	188	62	107
” ...	2012	—	—	—	—	—	—	—	—	—	134	196	59	105
” ...	2020	—	—	—	—	—	—	—	—	—	142	192	62	108
” ...	2061	1872	1727	1633	1555	1182	865	1087	558	62	143	201	70	117
” ...	2064	1738	—	—	—	—	—	—	—	—	139	194	59	103
” ...	2138	1686	1553	1470	—	—	—	—	—	—	136	192	62	106
” ...	2140	—	—	—	—	—	—	—	—	—	141	200	66	104
” ...	2149	1803	1662	1558	1453	1132	818	998	510	60	135	198	67	119
” ...	2162	1786	—	—	—	—	—	—	—	—	146	186	64	115
” ...	2165	—	—	—	—	—	—	—	—	—	133	192	64	105
” ...	2189	—	—	—	—	—	—	—	—	—	141	188	62	104
Tabawi ...	2171	—	—	—	—	—	—	—	—	—	131	179	57	97
Tagalawi ...	2001	—	—	—	—	—	—	—	—	—	148	185	63	110
” ...	2015	—	—	—	—	—	—	—	—	—	146	185	61	109
” ...	2026	—	—	—	—	—	—	—	—	—	156	198	57	107
” ...	2106	—	—	—	—	—	—	—	—	—	140	188	60	109
” ...	2121	1721	1585	1482	1410	1085	822	945	482	52	149	188	69	114
” ...	2125	1597	—	—	—	—	—	—	—	—	142	176	—	95
” ...	2126	—	—	—	—	—	—	—	—	—	148	182	61	101

MENTS—*continued.*

16	17	19	22	24	25	26	27	28	29	30	31	32	33	34	35	44
113	140	96	111	—	45	43	—	—	—	—	—	—	—	—	—	—
111	142	102	105	37	36	45	125	536	332	136	134	110	119	132	113	1940
114	141	115	101	31	44	43	113	557	330	138	125	99	114	128	119	1800
113	146	108	106	35	41	41	121	561	363	149	135	108	113	133	118	1775
104	127	91	—	—	33	42	—	—	—	—	—	—	—	—	—	—
121	135	102	106	33	45	41	116	—	—	—	—	—	—	—	—	—
120	140	105	106	36	41	45	118	—	—	—	—	—	—	—	—	—
114	140	111	104	38	37	43	114	564	346	142	131	106	122	139	127	2000
109	137	108	107	38	40	38	124	—	—	140	134	110	118	131	118	—
104	132	105	102	35	40	43	115	538	332	138	121	104	113	122	118	—
113	138	104	102	34	38	43	117	—	—	—	—	—	—	—	—	—
115	137	105	102	40	44	44	120	543	352	144	124	102	117	132	129	1935
105	134	111	100	35	39	44	109	—	—	143	124	100	109	123	117	1945
102	127	—	100	33	36	42	120	—	—	—	—	—	—	—	—	—
—	133	—	—	—	36	36	—	—	—	—	—	—	—	—	—	—
108	131	96	—	—	36	38	—	—	—	—	—	—	—	—	—	—
117	138	108	98	36	46	42	109	538	353	—	—	—	—	—	—	—
112	137	100	104	33	41	42	116	—	—	—	—	—	—	—	—	—
126	149	116	110	36	44	40	120	565	375	150	134	106	116	135	124	—
107	140	—	103	36	43	39	118	—	—	144	133	108	112	122	123	—
104	140	112	105	35	41	42	120	543	335	140	128	108	117	131	117	1825
104	135	104	—	—	38	39	—	—	—	134	119	97	—	123	115	1790
111	133	104	104	35	39	39	115	537	337	—	—	—	—	—	—	—

The numbers at the top of the thirty columns of each table refer to the following measurements :—

3. Stature.
4. Height of ear-*meatus* from ground.
5. Height of chin from ground.
6. Height of acromion from ground.
7. Height of elbow from ground.
8. Height of wrist „ „
9. Height of hips „ „
10. Height of knee „ „
11. Height of ankle „ „
12. Head breadth.
13. Head length.
14. Upper facial length.
15. Total facial length.
16. Bimalar facial breadth.
17. Maximal facial breadth (bizygomatic).
19. Maximal mandibular breadth (bigonial).
22. External interorbital breadth.
24. Internal interocular breadth.
25. Nasal breadth.
26. Nasal length.
27. Orbito-nasal arc.
28. Horizontal circumference.
29. Biauricular arc.
30. Auriculo-vertical radius.
31. Auriculo-frontal radius.
32. Auriculo-nasal radius.
33. Auriculo-alveolar radius.
34. Auriculo-mental radius.
35. Auriculo-occipital radius.
44. Span of arms.

Each subject, after he had been photographed and his physical features had been noted, was marked with a blue pencil on the following points :—the tip of the acromion for 6 (in the above list of measurements), the edge of the head of the radius for 7, the tip of the styloid process of the radius for 8, the upper margin of the great trochanter for 9, the lower border of the internal condyle of the femur for 10, the tip of the internal malleolus for 11, the glabella for 13 and 28, the nasion for 14, 15, 26, and 32, the lower border of the chin for 15 and 34, the lower angle of the malar bone for 16, the angles of the jaw for 19, and the external border of the orbits at the suture for 22 and 27.¹

¹ Herein we have been guided by the excellent *Anthropologische Methoden*, published by the late Dr. Emil Schmidt, Leipzig, 1888.



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196



195



196



178



200



178



200





194



204



194



204



193



197



193



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TYPES OF SUDANESE.
A CONTRIBUTION TO THE ANTHROPOLOGY OF THE SUDAN.

Measurements 4-11 were taken upon the subject standing beside a wall to which a measuring tape had been fixed. A right-angled triangular piece of celluloid was applied to the scale to find the height of the point in question.

Measurements 12-26 were taken with callipers in the ordinary way. The sliding instrument, designed by Mr. John Gray (and described in this *Journal*, vol. xxxi, p. 111), was used throughout.

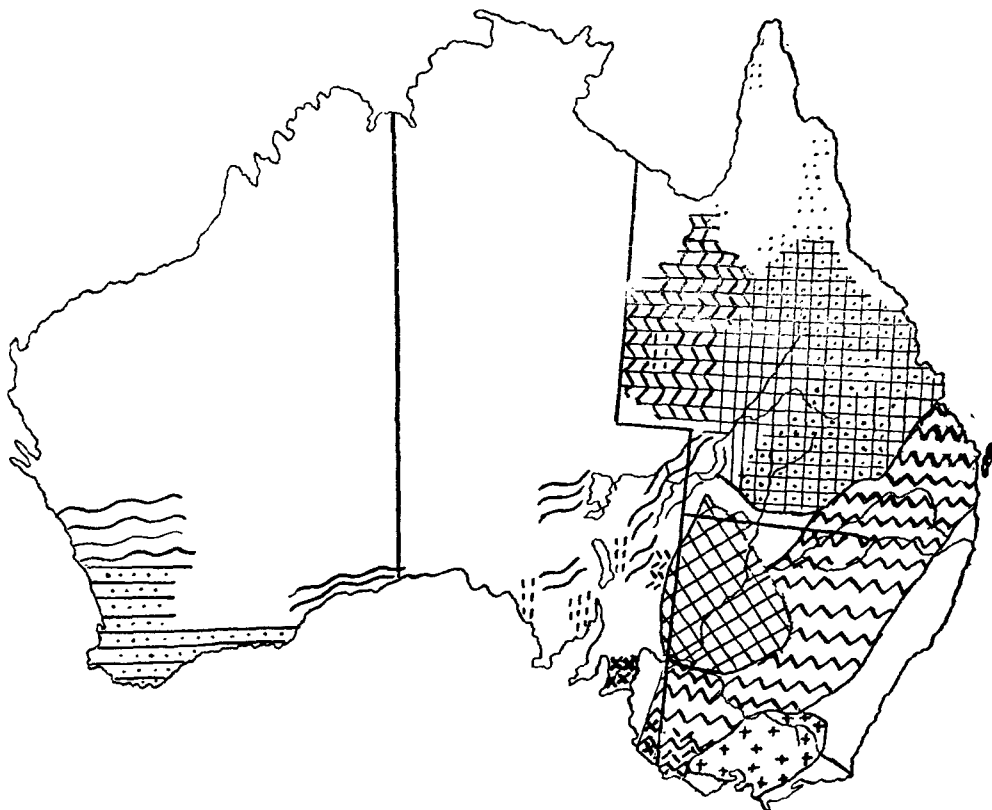
Measurements 27 and 28 were taken by means of a steel tape passed between the external margins of the orbits across the nose, or embracing the glabella and the most projecting point of the occiput. Measurement 29 was taken by passing the tape over the top of the head from ear-hole to ear-hole.













Measurements 30-35 were taken from the ear-hole to the most projecting frontal or occipital points or to the nasion, upper alveolus or chin. An apparatus, fitted with a goniometer (as described by one of us in *Man*, vol. iii, 1903, No. 4, p. 12), was used for this purpose. It was provided with a device, designed by Mr. Gray, which kept the horizontal or vertical traction upon the ear-holes constant during the taking of the various radial measurements.

NOTES ON THE PHOTOGRAPHS.

- No. 178. Nubawi, C.I. 71·76, N.I. 102·26, U.F.I. 48·55, nose root depressed, eyes oblique, ear prominent, mouth large, lips everted. Subject number 2056.
- No. 195. Bandawi, C.I. 75·40, N.I. 93·90, U.F.I. 53·03, nose root almost absent, eyes widely separated, forehead sloping considerably, face very long. Subject number 2160.
- No. 200. Dinkawi, C.I. 71·58, N.I. 100·0, U.F.I. 45·23, head extremely narrow, flat at the temples, brow ridges prominent. Subject number 2170.
- No. 196. Fertitawi, C.I. 76·46, N.I. 113·51, U.F.I. 39·72, a great contrast to the Dinka photographed. Subject number 2161.
- No. 193. Bertawi, C.I. 79·46, N.I. 125·0, U.F.I. 40·85, lower prognathism marked. Subject number 2136.
- No. 194. Bongawi, not measured.
- No. 197. Shilluk, C.I. 78·50, N.I. 88·63, U.F.I. 47·76, nose root usually prominent. Subject number 2162.
- No. 204. Furawi, C.I. 75·66, N.I. 93·35, U.F.I. 46·10. Subject number 2182.

THE ORIGIN OF THE AUSTRALIAN PHRATRIES AND EXPLANATIONS
OF SOME OF THE PHRATRY NAMES.



	Occurrence of Wootaroo as phratry name, Wortong in W.A.
	„ „ Watta as name for crow, Wortong in W.A.
	„ „ Yungaroo as phratry name.
	„ „ Yunga as name for white cockatoo.
	„ „ Pakoota as phratry name.
	„ „ Packoo as name for white cockatoo.
	„ „ Kilpara-Mükwara as phratry names.
	„ „ Dilbai-Küpaiththin as phratry names N. of Murray River, Kurokaitch-Kapaitch, S. of Murray River.
	„ „ Kapaitch as name for black cockatoo.
	„ „ Kurrake (Kurokaitch) as name for white cockatoo.
	„ „ Eaglehawk and crow phratries.
	Drift of language from N.E. to S.W. according to my linguistic map in <i>Eaglehawk and Crow</i>

THE ORIGIN OF THE AUSTRALIAN PHRATRIES AND EXPLANATIONS OF SOME OF THE PHRATRY NAMES.¹

BY THE REV. JOHN MATHEW, M.A., B.D.

PROLONGED inquiry has demonstrated that, throughout almost the whole of Australia, aboriginal society is divided into two exogamous sections. Among many tribes there are four or eight subdivisions. With these I do not propose to deal.

The late Drs. Howitt and Fison, though not the discoverers of these classes, were the first to apply themselves to the tracing of them throughout Australia. The primary two they for a time called phratries. Subsequently they abandoned this name on the ground that the Australian sections of society were different in kind from the phratries of ancient Greece, and Dr. Howitt, in his last work, uses the terms class and sub-class.² Other writers, however, myself included, prefer to retain the term phratry. The two sections into which Australian society is cleft owe their continued recognition to the universal, fixed conviction in the native mind, that the members of the one are different in kin from those of the other. The aborigines regard them as two fraternities. The use of the term phratry in this connection does not imply the assumption that the radical meaning of *φρατήρ* was identical with the present meaning of *brother*. The Greek *φρατρία* was, however, a *tribe of kindred race*,³ the term implied *relationship by blood-ties*, and although this significance does not fit in with Howitt and Fison's conception of the main sections, it exactly represents the aboriginal conception of them, and expresses much more precisely what they are than does a word like class with so general and indefinite a meaning.

Two theories have been advanced to account for the origin of the phratries. Howitt and Fison held that they were instituted by the arbitrary authority of leading men among the natives. This theory harmonises with their view of the development of Australian society. They affirmed a primitive promiscuity of intercourse in an undivided commune and thereafter the introduction of the dichotomous division with a reformatory purpose in view.⁴ They laid stress upon

¹ In the preparation of this paper I did not think it necessary to give exact references to all my authorities, but I wish to state that I am obliged chiefly to Curr's *Australian Race*, Howitt's *Native Tribes of South-East Australia*, and Thomas' *Kinship and Marriage in Australia*, and especially to the maps.

² *Native Tribes of South-East Australia*, p. 88.

³ Liddell and Scott.

⁴ Howitt, *Native Tribes of South-East Australia*, pp. 89, 90, 140, 143-144, 171-174.

the Murdoo Legend of the Diyeri tribe (narrated by Gason) to the effect that, in order to escape from observed evil results of incestuous unions, society was bisected into moieties, in obedience to the revealed will of Moora Moora, a supernatural being, members of one moiety being compelled to marry with those of the other.

Howitt and Fison backed up their theory of artificial bisection (with their accompanying hypothesis of group or communal marriage) by elaborate references to present-day sexual relationships and terms of kinship. This double-barrelled theory of arbitrary dichotomy and communal marriage was accepted by Professor Spencer and Mr. Gillen. They say, "The question of the social organisation of the Australian tribes and the significance of the 'terms of relationship' have given rise to a considerable amount of difference of opinion, and into these we have enquired as carefully as possible. The result of our work is undoubtedly to corroborate that of Messrs. Howitt and Fison in regard to these matters."¹ But, although so strongly supported, this theory of the origin of the phratries is, I believe, becoming more and more discredited.

My theory of their origin, which I may call the natural, kinship theory, is essentially contradictory to that of Howitt and Fison, which may justly be termed artificial. I first advanced mine in a paper contributed to the Royal Society of New South Wales in 1889 and subsequently corroborated it in *Eaglehawk and Crow* (1889). It is briefly, that the two phratries represent two ancient, distinct races, which amalgamated to form the Australian race. One race was Papuanian, very dark, with curly hair. The remnant of it became extinct with Truganini, the last of the pure Tasmanians. The other was a stronger, more advanced, lighter coloured race, with straight hair, and akin to the Dravidians and the Veddahs.

Since the publication of *Eaglehawk and Crow* evidence of first importance has come to light in support of the natural as against the artificial origin of the phratries, which I shall now give in condensed form.

(1) Mrs. Langloh Parker discovered that among the Euahlayi on the Narran River in New South Wales the two phratries were distinguished by the names *Gwaigulleah*, light-blooded, and *Gwaimudthen*, dark-blooded.

(2) Mrs. D. M. Bates has found in Western Australia, in the south-west corner of the continent, that the Tondarup class have a name, *Mela-Murnong*, meaning fair people, and the Ballarruk class are called *Ngwoota Murnong*, dark-skinned people.

(3) When visiting Barambah Aboriginal Settlement in the Wide Bay District, Queensland, in 1906, I discovered that the phratries were regarded as of different shades of blood, *Dilbai* being light blood, and *Kūpaitthin* dark blood. The complexions of the phratries were supposed to correspond to the shades of blood.

(4) On visiting two aboriginal reserves in Victoria (Condah in August, 1907, and Coranderrk in January, 1909), four natives, one of whom was close on eighty and the others over sixty years of age, told me, when interrogated separately, that

¹ *Native Tribes of Central Australia*, p. viii.

the old blacks professed to be able to distinguish members of the Kurokaitch from those of the Kapaitch phratry and members of the Bundyil from those of the Wa by the quality of the hair. Two told me that one phratry had fine hair the other coarse; and, corroborative of this distinction, a fifth native, belonging to Swan Hill on the Murray, taking hold of his hair said, "I'm *K̄rlba*, straight hair, other fellows are *M̄kwar*, curly hair," and went on to explain that the straight hair people could not marry among themselves but had to intermarry with the curly hair people, and *vice versa*. In August, 1909, at Condah, an elderly aboriginal, born on the Murray, also told me that the names *K̄rlba* and *M̄kwar* denoted (or implied) different qualities of hair. This information would have fallen on deaf ears had I not known that *K̄lpara* and *M̄kwara* were the names of the phratries over nearly the whole of the western half of New South Wales. I had hitherto associated these names with the birds eaglehawk and crow, as others had done (although there has been difference of opinion as to which was eaglehawk and which crow), but here was an unexpected discovery of a quite different application of the stems of these terms. On the Darling (New South Wales) the name for eaglehawk is *bilyāra* and for crow *waku*. I have examined many vocabularies but in none have I found names for these birds like the Darling phratry names *K̄lpara* and *M̄kwara*, except *ibbai* (eaglehawk) in the Wiraidhuri dialect, which may be the analogue of *K̄lpara*. It is therefore possible that eaglehawk and crow are only secondary applications of these terms, and the evidence above cited renders it also probable that the more special application, if not the radical significance, is straight-haired and curly-haired.

This suggests a new line of inquiry as to the meaning of other phratry names not yet interpreted, and furnishes fresh and very strong support to my theory, that the phratries represent two races.

(5) The tribes having the phratries *K̄lpara-M̄kwara* are on the Darling, on a part of the Murray above its confluence with the Darling and at Booligal on the Lachlan, but far to the east the Wonghibon tribe, on the north of the Lachlan River, have *Ngiebumurra-Mukumurra* as their phratry names. These are obviously variants of *K̄lpara-M̄kwara*, either the original forms or forms lengthened by the common affix *murra*. The territory therefore of the *K̄lpara-M̄kwara* (with variants) extends some 400 miles from north-west to south-east and about 350 in a straight line north-east to south-west along the course of the Darling above its junction with the Murray.

(6) I suspected that the phratry names *Dilbai-K̄paitthin*, prevailing among the Kamilroi of New South Wales and the Kabi and some adjacent Queensland tribes as far north as Fraser Island, near Maryborough, corresponded, *Dilbai* with *K̄lpara*, and *K̄paitthin* with *Kapaitch*, a phratry name current in the west of Victoria. My presumption has been confirmed by the fact that an exceptionally intelligent Victorian black, who had visited the *K̄lpara-M̄kwara* tribes, when I pronounced these names to him, regarded them as having this equivalence without such a suggestion from me.

In Australian languages a diphthong, or the conjunction of two different vowels, usually implies the elision of a consonant, commonly *r* or *k*, which once separated the vowels, and a dental is often substituted for a guttural. Recognising the frequent occurrence of these changes it is obvious that *Dilbai* would be an easy and natural corruption of *Kilpara*. *Kapaitch* has a variant in Victoria, *Kūmait*, so that there is no philological straining in the suggestion that *Kūpaitthin* has the same stem as *Kapaitch*. I cannot account for the final *-in* otherwise than that in the languages of the Kabi, Kamilroi and other tribes which have the phratry name *Kūpaitthin*, a final *t* rarely if ever occurs, and the combination *tch* would be impossible, whereas final *n* is common and probably often represents a primitive *-na*, the mark of substantives. Further, in Victoria we find an explanation of *Kapaitch*, viz., black cockatoo (or *Banksian Cockatoo*), and this in the Maar tribe, which unlike its neighbours, has strong linguistic affinities with the New South Wales and Queensland tribes where the term *Kūpaitthin* prevails.

If my inference be correct, that *Kilpara* and *Dilbai* are radically identical, then this phratry name extends over a distance of about 950 miles in a straight line from the junction of the Murray and Darling to the north end of Fraser Island on the Queensland coast. And if *Kūpaitthin* be the same as *Kapaitch*, of which identity I have no doubt, the extreme points where this name occurs are about 1,200 miles apart, in a straight line extending from the border of Victoria and South Australia, on the coast, to the north of Fraser Island, with a gap in the centre where it is displaced mainly by *Mukumurra* and *Mūkwarra*.

The members of the *Kurokaitch-Kapaitch* phratryes say that *Kapaitch* is the black cockatoo with yellow feathers in the tail, the ordinary name for which they give as *wilan*. Dawson gives *kappatch* as an alternative name for *wilann*, the *Banksian* cockatoo, and locates the word only in one small community, the Maar people of the "small lip" language. I am doubtful about the radical meaning of *Kapaitch*, but I surmise that it corresponds to a similar word of very extensive prevalence meaning black duck.

(7) Over the whole of Central Queensland, from east to west, one of the phratry names is *Wootaroo*, with variants. For the other the commonest term is *Yungaroo*, but this latter is not constant, having as substitutes *Mullara* in two localities and *Pakoota* in a third. The names *Yungaroo-Wootaroo* have not been explained hitherto. Mr. N. W. Thomas has suggested *kangaroo* for the former, and *emu* for the latter, but without any reasons being given, *kangaroo* apparently from similarity of sound and *emu* as a suitable partner to *kangaroo*.

I believe I have discovered the true significance of these two phratry names. The stems I interpret as *yunga*, white cockatoo, and *woota*, crow. The common affix *-roo* I am unable to explain, but it probably has merely the meaning of plurality, just as we might speak of the *Yungas* and the *Wootas*; or it may be a genitive suffix giving the terms an adjectival value, i.e., *Yungaroo* would mean belonging to the *yunga*, or of the *yunga*.

In proof of my interpretation of these phratry names being correct I would

point out that, as regards the stem *Woota-* (with variants *Witte-*, etc.), the name for crow, over about one-half of the vast area where this phratry name holds, is *watta*, with such variants as *wutthagun*, *wotagan*, *wotha*. In the analogous word for crow occurring elsewhere and widely distributed a guttural (*g* or *k*) takes the place of the dental. One locality forms an exception, viz., the south-west corner of Australia, where the dental again appears in such forms as *wortong*, *wardung*, etc. By referring to my linguistic map in *Eaglehawk and Crow*, it will be observed that I connect the language of the south-west of Australia with the dialects of west-central Queensland. *Wortong* (Western Australia) and *wotagan* (Queensland) constitute one of the resemblances.

The objection might be urged that in the first syllable of the phratry name, the vowel is usually *ū* (*oo*), whereas in the name for crow it is usually *a*. But this objection is met by the fact that the phratry name has sometimes *i* in the first syllable, and the name for crow has sometimes *u* and sometimes *o*. And what is perhaps more conclusive proof that *watta*, crow, is the stem of *Wootaroo*, is the fact that in Western Australia the first syllable of the term for both the bird and the phratry occurs with each of the vowels *a*, *o*, and *ū*, thus we find *wartung*, *wordong*, and *woodung*.

Further, in the south-western corner of Queensland, in the Badieri tribe on the Paroo River, as at Mackay on the east coast, Yungo is the term for the other phratry. Yungo was also a phratry name with the Kurnandiburi tribe on the east of the Barcoo in the south-west of Queensland. Now we find that on the east of Lake Torrens *younganna* and at Streaky Bay on the east shore of the Great Australian Bight *yungana* occur as the names of the white cockatoo, and these are two localities which my linguistic map connects with the south-west corner of Western Australia and the south-west of Queensland. Variants, in the same sense occur elsewhere, as *yangkunnu* in Yorke Peninsula, South Australia, and *yungerli* on the Burke River, Queensland. The affix *-na* may be neglected, it is often merely a definitive marking a substantive. Hence *Yunga-* as the stem part of a phratry means white cockatoo, and *Woota-*, in a similar connection, means crow.

(8) But this derivation of these terms leads to very important and sweeping conclusions. It identifies the meaning of the phratry names of about one-half of Queensland with the meaning of those in the south-west corner of Australia where they are *Manitchmat*, white cockatoo, and *Wortongmat*, crow, and it identifies the meaning of one of the Queensland names, *Yungaroo*, with that of *Kurokaitch* (white cockatoo) of the west of Victoria and the adjoining part of South Australia.

Pakoota, a substitute for *Yungaroo* in the west of Queensland, is explained by *packoo*, white cockatoo, in use in South Australia to the north-west of the Barrier Ranges.

(9) The tract between the Kilpara-Mükwara phratries in the east and Manitchmat-Wortongmat in Western Australia is occupied by the Kararu-Matteri phratries. There are some grounds for inferring that *Kara*, the apparent stem of *Kararu*, means white cockatoo. Words having this significance and with stem

kara are very widely distributed, such as *karong*, Warburton, South Australia, *kurrake*, Adelaide, South Australia, *karaal*, Booandik tribe, South Australia, *kurokaitch*, Glenelg and Wannon, Victoria; *karang*, Yilima, Victoria; *karra*, Ballina, New South Wales; *karabi*, Georges River, New South Wales. I do not regard these analogues as quite conclusive proof, but they certainly give support to the suggestion that *Kararu* is a white cockatoo phratry. I can offer no explanation of *Matteri* unless it be a corruption of *Wootaroo*, which is quite possible. Thus in the east we find *oorun*, *woorin* and *moorun*, variants of *nguruin*, emu.

The explanation of the terms Yungaroo-Wootaroo gives a vast extension to the area known to be covered by phratry names signifying contrast of colour. In fact all the phratry names that have been explained denote a contrast, a colour contrast or a physical contrast, or both, as the subjoined table will show.

PHRATRY NAMES.				MEANING.
<i>Bundyil-Wa</i>	...	...	...	Eaglehawk-Crow.
<i>Merung-Yukembruk</i>	...	...	...	" "
<i>Malian-Umbe</i>	...	...	...	" "
<i>Kurokaitch-Kapaitch</i>	...	...	...	White Cockatoo-Black Cockatoo.
<i>Kulpara-Mukwara</i>	...	...	...	Straight Hair-Curly Hair.
<i>Yungaroo-Wootaroo</i>	...	...	...	White Cockatoo-Crow.
<i>Pakoota-Wootaroo</i>	...	...	...	" " "
<i>Manitchmat-Wortongmat</i>	...	...	...	" " "
<i>Gwaigullean-Gwaimudthen</i>	...	...	...	Light Blooded-Dark Blooded.
<i>Walar-Murla</i>	...	...	...	-Bee -Bee (one variety is light in colour another dark).

It is extremely probable that at one time more than one pair of contrasted names were current in the one locality for distinguishing the phratries.

It must be admitted that widespread recognition by the aborigines of conspicuous physical differences, distinguishing the one phratry from the other, strongly reinforces my natural theory of the origin of the phratries, viz., that they represent two originally distinct races contrasted in complexion, physique, the quality of the hair, etc. And if this be the true account of their origin, what becomes of Howitt and Fison's artificial theory of an original, undivided commune with promiscuous intercourse, followed by a bisection effected by authority throughout Australia?

It is almost superfluous to point out that the meaning of the phratry names besides indicating the essential cause of the existence of the phratries, has also an important bearing upon the question of the origin of totemism.

DINKA LAWS AND CUSTOMS.

BY CAPTAIN HUGH O'SULLIVAN, R.M. (now Governor of the
Upper Nile Province).

WITH AN INTRODUCTORY NOTE BY E. SIDNEY HARTLAND.

 INTRODUCTORY NOTE.

THE following collection lately came to my hands through the kind offices of Mr. Russell Rea, M.P., and by the permission of Captain O'Sullivan and of the Governor-General of the Sudan, and with their permission and concurrence it is now printed. Captain O'Sullivan is an officer of the Sudan Government. The collection was made by him as a memorandum for his own guidance in administration during three years' administrative work which included all the various Dinka divisions in the Upper Nile Province. It is therefore directed to the purely practical purpose of enabling the administrator to decide upon native principles the questions most likely to come before him, as the ultimate referee in disputes. This explains the total omission of many subjects rightly regarded by anthropologists as of the first importance for the sympathetic comprehension of the people. Severely limited as it is, however, it is, I venture to think, of value as supplementing and correcting our previous information and presenting, as far as it goes, a systematic view of Dinka society.

The Dinkas are a mere congeries of independent tribes. They have never been welded into a nation. They have never had, so far as we know, any great military or political genius like Chaka or Moshesh to organise them into a compact and powerful kingdom. Every village governs itself by means of the village elders, and the chief is merely the leader in petty raids or in the equally petty and desultory wars resulting from blood-feuds. He presides, it is true, at the deliberations of the "old men," and appears to be the principal executive officer of the village or division of the tribe, but the real power is vested in the general body of the "old men."

Dinka society is patriarchal. The father is the head of the family; but it would seem that he is far from being absolute ruler. Although Captain O'Sullivan describes his wives and unmarried children as his property, they can hardly be so in the same sense in which his slaves, cattle and so forth, are his property. He must have duties towards them, though such duties may be more vaguely recognised and more difficult of enforcement than his duties towards members of other families.

This is clear from the rule that when a dispute arises within the family he does not settle it himself, but refers it to the "old men." If a woman be killed by her husband it is treated as an accident and a misfortune to the husband ; but Captain O'Sullivan significantly remarks : " He may have to pay a cow or more to propitiate the girl's family and stop talk." If the wife were, in the full sense of the term, the property of her husband, there would be no payment of cattle to propitiate her family.

The truth is that the payment of a bride-price has been very apt to mislead European inquirers as to the real status of the wife and children. In savage and barbarous conditions of society, it is one of the most usual and binding terms of the marriage contract. A thousand years ago, among the ancient English, it was the ordinary method of obtaining a wife. Speaking generally, its effect undoubtedly is to transfer to the husband large powers over the person of the wife. Where kinship is reckoned exclusively through the father, it is usually the payment of the bride-price that authorises him to reckon the children to his stock and gives him a full measure of control over them, to the exclusion of any claim by the wife's kindred. But all this comes very far short of vesting their absolute ownership in him. They are not slaves, however servile their status may appear to superficial observation.

In relation to this point, the Dinka law of divorce is interesting. I use the term *divorce* for convenience, but its connotation is very different from that in European society. It is not the subject of a judicial decree involving more or less penal consequences and disgrace. So far as it is the subject of legal proceedings, the questions at issue are concerned with the return of the bride-price rather than directly with the conduct of the wife or the husband during the marriage. In order to " break a marriage," as the process is called, all that is necessary is that the cattle paid for the bride with all their young, or an equivalent, be repaid to the husband. She is then entitled to return to her own family, together with any children she may have borne. Various causes are enumerated for breaking the marriage ; but the wife's unfaithfulness is not one of them, provided she be willing to remain in her husband's enclosure. The islanders of Torres Straits, according to Dr. Haddon, lay all the blame for peccadilloes of this kind on the woman. As they succinctly express it : " Woman, she steal man ; man, how he help it ? " The Dinka theory is the precise converse of this. All the blame is laid upon the man, who is liable to pay full compensation to the aggrieved husband. Until recently, indeed, among the southern Dinkas he was liable to be killed. On the other hand, as among many of the negro peoples on the West Coast, the woman's character is unstained by an act of infidelity, and she is subject to no legal punishment. So far is she from being the property of her husband, that if he ill-treat her, whether on this or on any other account, it seems she may refuse to live with him. In this case, there is no help for it but to repay the bride-price of cattle with (in most cases) their natural increase. When the marriage is thus " broken," the woman is once more in the marriage market. Possibly, she has already an understanding with an eligible gentleman, who will have to make good

to her father and his relatives the bride-price reclaimed by her former husband. Unless her charms are faded by age, they will hardly be discounted by her history ; and we may suspect that her attractions are positively enhanced by any children she may already have, for on marriage they will pass to her next husband and be reckoned to his kin.

Kinship is derived by the Dinkas through males only. But to this there is one exception. The definition of incest extends it to sexual intercourse between persons connected by blood on either side, so far as the genealogies can be traced in tradition. For no other purpose, to his knowledge, Captain O'Sullivan informs me, is kinship traced through both parents. The artificial character of kinship through males is abundantly evident from the customs recorded in the following pages. Presumably, therefore, the extension of the definition of incest to include persons related through the mother, is a vestige of maternal descent.

The artificiality of kinship through males is nowhere more strikingly illustrated than in the Dinka arrangements for "raising up seed" to a man who dies childless. We are familiar with the practice among the ancient Hebrews. It depends upon the principle that any child born of a man's wife, whoever may have been the begetter, is in law the child of the husband. *Is pater quem nuptiæ demonstrant.* In accordance with this principle, the practice of procuring artificially a son for the deceased is very commonly followed by semi-civilised peoples. But the Dinkas follow it, probably, further than any other. Many other African tribes regard the children born of a widow, at whatever distance of time from her husband's death, as his children. I am not aware of any others which provide for the extreme case of a man's dying childless, or at least sonless, without near male relatives and leaving only widows beyond the age of child-bearing, by allowing the widow or daughter in whom his property may temporarily vest, to contract marriage in his name with a woman who is, by the act of marriage, to become his widow and bear his heir. It is absolutely certain that the son born of such a woman can have none of the blood of his "father." He is his son only by a legal fiction as ingenious as any ever propounded by lawyers of more civilised countries. Adoption by a widow, so common elsewhere, seems to be unknown to Dinka law.

The economic basis of Dinka society is the possession of cattle. The Dinkas are essentially a pastoral people. As we might expect, their currency is in cattle. The bride-price is paid in cattle. Quarrels are settled by the payment of cattle as fines or compensation. Raids are made for cattle. They have, indeed, other domestic animals, such as sheep and poultry ; but these are of minor importance, and probably of modern introduction. Property, therefore, to a Dinka means cattle. No woman can hold property, except in one case—that just alluded to, of a man who dies childless and without masculine relatives. In such a case the widow holds his property until she shall have provided an heir in whom it will vest. She is sometimes even required to provide not only the heir but the property he is to inherit. In the illustration given by Captain O'Sullivan she does so by means of the bride-price of the daughter. The special importance thus

attached to the continuation of the family (which is only possible in the male line) and to the provision of cattle for its maintenance leads to the conjecture that it has a religious origin. Upon this, however, the collection affords us no light. Having regard to the object of the collection, there is no ground for surprise that it includes little or nothing on religion. Indeed, it may be difficult to obtain any trustworthy evidence on the subject. Emin Pasha expressly tells us that "the Dinka is very reticent as to his beliefs." In the absence of specific information, we are driven back upon the analogy of the customs of other peoples; and we can have very little doubt that a cult of ancestors prevails. Filial piety is stated to be "markedly present," and the "sacrifice of atonement" performed on the infringement of prohibited degrees points in the same direction. Incest would bring down the vengeance of ancestors on both sides. The sacrifice of a bull may be intended as a propitiation to them. But the collection also contains a hint that ancestor-worship may not be the only cult. The fact that the most binding oaths are taken on a sacred spear points to some religious beliefs and practices having the spear as their centre and symbol. They may not be so elaborate as those connected with the sacred spear of Kirunga adored by the Warundi, but they may be equally important in the national life.

Although we know from other sources that the belief in witchcraft is as strong among the Dinkas as elsewhere on a similar plane of culture, Captain O'Sullivan has recorded nothing about it, beyond an incidental reference in summarising the Dinka tradition on p. 176. The omission is probably due to the fact that under British rule sorcery is wholly ignored, and legal proceedings founded upon it are discouraged, if not suppressed. From an anthropological point of view this omission is to be regretted. It might have been illustrated in connection with the law that articles of personal wear are regarded not as property but as part of the person wearing them. Identification of the wearer with his clothing in obscure processes of thought is common in the superstitions of almost any part of the world, but in the contemplation of law it must be very rare.

But we should be ungracious to complain of the defects of a compilation which reveals to us one side of Dinka life in a more systematic way than has hitherto, so far as I am aware, been done: we should be ungracious even if those defects were faults, and not rather, what in fact most of them are, necessary omissions, because the subjects to which they relate are outside the scope of the collection. It will be a matter of gratification to anthropologists to think that such work as this is appreciated at headquarters, and that the Government of the Sudan is sensible of the value of all well-considered endeavours after a complete understanding of the subject peoples.

DINKA LAWS AND CUSTOMS.

The Dinkas having had no means of recording their laws and customs, no one in the tribe could clearly detail a system of the rules which guide them in the

settlement of tribal cases and disputes, but a knowledge can be obtained by a careful coding from the simple uncomplicated cases and their methods of settlement, and working synthetically with these as a basis.

Though apparent differences have risen in the various districts the main principles are the same, and what at first seem differences are really their regard for all the circumstances of the case, persons and conditions, such as:—

- (a) The existing supply and demand in cattle and marriageable women.
- (b) The local estimate as to the gravity of any particular offence, dependent on the conditions in the district.

For these reasons any fixed scale of "crimes and punishments" would only mislead, and result in errors and real injustice, being in absolute opposition to their customs.

It should be realised that a decision given in accordance with any other law (such as Moslem or Christian, etc.), however apparently ethically correct, would not be accepted as a clever judgement, but as an injustice done them by one who knew nothing of justice, *i.e.*, their system of tribal law; and this stigma would be attached to "the Government" by them.

One would be too much in the hands of intrigue, and lose prestige by always having to ask the tribal custom on a case under judgement, without the knowledge necessary to discuss it and check errors; but the compiling and codifying of their laws, each rule checked thoroughly and free of influence of its application to any particular case, aids in ability to test the correctness of a decision given by a court of their "old people," in accordance with their own law, and even enables one not only to point out the defects in the decision but to explain the reasons.

This code, as it stands, must not be applied either to the Shilluks or the Anuaks who have not got the same complicated laws of Widows, Inheritance, and, Lineage; but it is closely akin to that of the Nuers, who are a much more recent offset from the original fountain of these tribes of which the Dinkas are the reduced stem (if native tradition is to be believed); and the Nuers still speak a language of much more obvious similarity.

As with the laws of all these tribes, they are based on:—

- (a) The possession of women and cattle.
- (b) The purchase of wives by means of cattle.
- (c) Inheritance of women and children and cattle.
- (d) Compensation for injury and homicide, by means of women and cattle.

The origin of the Dinka tribe, and the foundation and establishment of their customs and laws are of great interest.

The origin of their laws appears to have been experience as applied to suit the tribal mode of life, and this experience and resultant customs are of such antiquity that it is almost hopeless, from lack of any written records, to trace them back to a known stem.

Some idea of the former reach of the Dinka tribe can be got from the following old Dinka tradition, which I have shortened very much, as it goes into great detail of adventure, sorcery, etc. :—

“In the days of the great Sheikh Aiwel, the big chief, when we were a powerful tribe, a discussion arose as to where the sun went to at night and left the world cold. Aiwel was a great man and inspired : he was born of an old woman who had never had children, and was beyond the age of child-bearing, and his father was ‘the waters of the great river’ (the Nile?). And Aiwel said, ‘Why do you talk so much of it, it is only necessary to go and see? Direct a party to follow it on its course each day and one day they will find its place of rest.’

“So some of the young men were appointed to find out, and they went, and were absent for very many moons, for they could not return without the knowledge for fear of the anger of Aiwel, and the laughter of their sisters. But one day a few old men came into the Dinka country, and these men asked for their relations, some of whom were dead. They were those left living of the young men who had followed the sun; and they told the people of their journey, and how they had followed until those left alive came to the ‘end of the land,’ where there was very great water which was salt, and each night they saw the sun sink into this water far off, and so it was cooled like a hot spear-blade which is dipped into the river, ‘and so we have come back to tell our chief Aiwel.’”

As mentioned, their laws were founded on experience, and amongst the greater experiences which would affect their very elementary mode of life they found that the marriage of relatives by blood from either father's or mother's side was injurious and prejudicial to tribal conditions and requirements. So a law was made against this accordingly, extending in its application to the descendants from several former generations. This was found not sufficient owing to their inability to check seduction, so it was made a crime for distant connections to have intercourse with each other. Later, when their great leaders had died and the tribe began to disunite, no one was powerful enough to order and have the death-sentence carried out and keep proper control, so their “inspired men” made them believe that for these sins the great deity brought about an earlier death, sometimes to all, sometimes to one of the parties concerned. But, in order to avoid the possibility of demonstrative proof to the contrary, their “sacrifice of atonement” was introduced, so as to give face to any failure of the threatened event to happen, but nominally to lessen, or preserve from the chance of such misfortune.¹

This “sacrifice” took the form of the killing of a bull, cow, or cattle, according to gravity of offence, and is combined with a gift of cattle to the

¹ Captain O'Sullivan writes in reference to this paragraph :—“I was here only expressing the hypothesis I have been led to form from facts found. There is no definite native tradition on the matter that I could ascertain, beyond their agreement that certain matters had been found ‘not good’ by experience by their ancestors. They do say : ‘At one time such and such a crime would have been punished by death, but now it is different.’”

offended people in compensation, and with intention to be also a deterrent to would-be offenders. "The offended people" are always the parents of the offending woman, as the burden of these offences always falls on the man.

This will be more readily understood as a woman is not allowed to possess property. All their laws have their obvious motives such as this. If by chance, any of those concerned did die, it was held that the sacrifice had not been accepted, or had been insufficient, and a blood claim was allowed. If the offender had refused to supply the cattle for sacrifice "blood-money" was demanded, and if refused a blood-feud established. These held good even for years after the alleged offence.

From the part played by these "sacrifices of atonement" in the establishment of their laws it will be realised that they put great weight on them in the tribe, and on no account should they be disregarded or dismissed as futile in determination of any case. And this, not only from their tribal point of view, but from that of administration by the Government; as to remove their fear of, or belief in, superhuman punishment for offences would be to invite an increase of crime, especially in people of their nature and habit.

The tribal system of self-administration is by "Courts" of the "old people" of each village or clan. These "old people" are not elected, but are held to be qualified merely by the fact of old age, as having the best knowledge of tribal traditions and customs and the way to direct matters and settle disputes. It is the "old people" of two sections quarrelling who arrange for peace and settle the terms.¹ The sheikh is not the judge or lawgiver of his section. He is the leader of the warriors and acts as president and spokesman of his court of advisers, "the old people."

The father or head of a family is treated with great respect by his people, but he refers even matters of "family disputes" to the court of the "old people." Filial piety is markedly present in the Dinka tribe.

The Dinka laws may be assembled under the following heads :—

1. Laws of property.
2. „ „ lineage.
3. „ „ marriage.
4. „ „ marriage payment.
5. „ „ breaking of marriage and repayment of marriage price.
6. „ „ widows.

¹ In answer to a query Captain O'Sullivan kindly explains :—"Sections may mean families, divisions of a village, or even divisions of a tribe. Each head of a family keeps his family and property intact, generally in a village of itself; but where families have had to combine for purposes of defence into one village, they still have a definite section for each family and its own cattle-paths. Whatever the sections are that are quarrelling it is the old people of such sections who form the court to [arrange] terms. The chief of the division which includes such two sections may be present to act as president and witness the settlement; but he is really only the leader of the warriors, and the old people settle the matter."

7. Laws of inheritance.
8. „ „ seduction.
9. „ „ incest.
10. „ „ adultery.
11. „ „ rape.
12. „ „ theft.
13. „ „ injury.
14. „ „ killing.
15. „ „ punishments.

It will be noticed that these laws may be divided into laws of “conduct” or “morality,” and laws of “transgression and punishment”; and, as would be expected under existing conditions, those of “conduct” or “morality” are much more determinate than the latter, which vary, as mentioned before, according to the relative wealth and condition of a district, which would influence the local estimate of offence and punishment. Thus, whereas a Dinka of Twi, until recently perhaps, would have been killed and all his cows seized for such an offence as adultery; in Bowom, the most northern district, he would run no great risk of being killed, and only such a fine as they thought would compensate the husband for the injury done him would be inflicted on the offender.

This difference is due to the less hot-headed views taken by the northern Dinkas, who have seen the way the Sudanese people lived under the Dervish rule and later, and a knowledge that killing is treated as a greater offence than adultery by the present Government.

1. LAWS OF PROPERTY.

1. The following are a man's property :—

1. His wives.
2. „ sons, whilst unmarried.
3. „ daughters, whilst unmarried.
4. „ children of unmarried daughters.
5. „ daughters whose marriage has been “broken.”
6. „ children of such daughters.
7. „ slaves.
8. „ children of slaves.
9. „ cattle.
10. „ corn.
11. „ property earned by people who are his property.

2. For the purposes of this law, clothes and ornaments are not considered as property; they are part of the person wearing them, and so also is the skin on which each wife sleeps.

3. No woman can possess property, she being herself property: but

4. A woman can hold property "in trust" :—

- (a) If she is the widow of a man none of whose male relatives are living.
- (b) If she is the daughter of a man none of whose male relatives are living, and if her own mother is also dead.

N.B.—For object of this see laws of "lineage" and "inheritance."

5. A son, when married, ceases to be property, he becomes head of a family and a holder of property.

2. LAWS OF LINEAGE.

1. All children borne by a man's wives, irrespective of who is their natural father, are his children and his property; and, if boys, are in name and rights of inheritance that man's sons.

2. All children borne by a man's widows are his children and the property of his heirs, irrespective of who is their natural father and of time elapsed since his death; and, if boys, are in name and rights of inheritance that man's sons.

3. All children borne by a man's unmarried daughters are that man's property, irrespective of who is the natural father, but if sons, take the name of their mother's father until their mother is married, in which case they change their name to that of their mother's husband, and (unless other contract is specially made) become with their mother the property of her husband, and have equal rights of inheritance with his own sons. In the case of the girl never marrying, owing to her death or other cause, they, if sons, have rights of inheritance from her father.

4. All children borne by a man's daughter whose marriage has been "broken," *i.e.*, who has been divorced, are that man's property. They take the name of their mother's husband, or, if she marries again, of her new husband. If she does not marry again, their rights of inheritance are from her father but, if she marries again, from her new husband.

5. Children borne by a man's daughters whose marriage has been only partially "broken" (*i.e.*, she herself has been "divorced" but the return of part of the marriage price been remitted in consideration of such children remaining with her husband), these children remain as that husband's property and children, in every respect as if their mother had not been divorced.

6. A woman qualified to hold property "in trust" under Laws of Property, 4 (a), (b), can marry (*i.e.*, purchase) a girl to be respectively (b) her father's widow, or (a) her husband's widow, and all children borne by this girl from any source whatsoever are under these Laws of Lineage as if the deceased man had married their mother during his life; the sons inheriting his property including their own mother and sisters and their mother's purchaser, *i.e.*, the widow or daughter of the deceased man.

Example.—A dies, leaving one widow and one daughter by another wife. He has no male relatives. The widow is beyond the age of childbirth. He leaves no cattle. The widow

marries the daughter to a man for ten cows. With these cows she buys a girl as widow to her dead husband for eight cows, there being none of her husband's. She brings a man from her own people, if possible, and he lies with the girl. In the next few years the girl gives birth to two daughters and a son. The two remaining cows have meanwhile increased to five with their young. By the time the son has grown up the two daughters have been given in marriage, and the cows paid for them are held "in trust" by A's widow who purchased his mother. The son inherits all the cattle, also his own mother, and her purchaser, A's widow. His own natural father has no claim of any kind on him, beyond such presents of cattle as A's widow paid him for his services. The son carries A's name. Meanwhile his mother has given birth to another son. This son is entitled to half A's possessions. If there is a third son each is entitled to one-third of the possessions, etc., as embodied in "Laws of Inheritance."

3. LAWS OF MARRIAGE.

1. By marriage is meant the purchase of a girl by the payment of cattle to the father, guardian or owner of the girl. The payment gives to the buyer the possession of the girl and the right to all children borne by her. There is no limit to the number of wives.

2. The purchaser may be either—

(a) a man, or

(b) a woman entitled to hold property "in trust" under Law of Property
4 (a), (b).

Note.—In the latter case the girl becomes "a widow" at once and under the Law of Widows.

3. No girl is obliged to marry anyone unless she is herself willing.

Note.—Fear of beating is used to influence a girl to consent, but such coercion is against tribal law.

The desire to have a large "marriage price" paid as their value, will influence them to accept marriage with men objectionable to them, and is the cause of a certain amount of unfaithfulness.

4. The ceremony of marriage consists in :—

1. The marriage feast and sacrifice.

2. The formal handing over of part of the cattle of the "wife price" to the girl's father or guardian by the boy's parents.

3. The removal of the girl to her husband's enclosure.

Note.—All the same ceremonies are gone through if she is bought by a woman under section 2 (b) of this law and section 4 (a), (b) of Laws of Property, and section 6, Laws of Lineage.

5. The formalities in section 4 having taken place the girl is the property of the husband (or purchaser) irrespective of whether the whole "wife price" has been paid or not; he has from that moment all the powers of a husband with regard to her.

See Law of Adultery.

„ „ Lineage.

„ „ Inheritance.

6. If, after taking possession of the girl, the man fails to pay the remainder of the "marriage payment" as arranged by the council (see 7 below), the father of the girl can apply to a Dinka court, and if the man does not satisfy him, he can take his daughter back and any children she has borne, returning to her husband all the cattle already paid for her and all their young.

Note.—From this it will be seen how inappropriate the term "divorce" is to the tribal "breaking of marriage."

7. All the agreements necessary before a marriage are made by a council consisting of the senior relatives of both man and woman, who acting as witnesses decide the amount of the "marriage payment," its method of payment, and the disposal of any children the girl may have borne previous to this marriage, either when unmarried or by a previous marriage now "broken."

8. A man may not marry any blood relative—see Laws of Incest.

4. LAWS OF "MARRIAGE PAYMENT."

1. By "marriage payment" is meant the number of cattle which the council (consisting of the senior members of the families of the intending husband and wife, see Laws of Marriage, 7) decide shall be paid by the man to the girl's father or guardian, for her in marriage. This applies equally to the case of a woman buying a "wife widow" for her deceased husband or father under laws already detailed.

Note.—In Arabic the term *mahr* is used to express this "marriage payment," but it is as inappropriate and misleading as the term "dowry" would be; there being no payment to the girl married, either by the intending husband or by her own people, as indicated by the terms *mahr* and "dowry" respectively. Although it is true that amongst Moslems the *mahr* is paid to the parents of the girl, and it would be very unconventional for the girl to make claim for it, still, should she do so, it is hers by law.

2. It is not necessary that the whole "marriage payment" be paid before the ceremony can take place.

3. The council decides:—

- (a) How many cows, and how many bulls must be paid.
- (b) After payment of how many the ceremony shall take place.
- (c) When the remainder must be paid, either by time or by occasion, such as cattle coming to the boy's father or guardian, in payment of marriage of one of his women.
- (d) What children, previously borne by the girl, are to go with her to her husband as his property (see Marriage, 7).

4. A "marriage payment" not completed is binding on the heirs of the man should he die, and is due not only to the father or guardian of the wife, but to the heirs of the creditor.

Example.—A marries B's daughter. He still owes two cows. A and B die. B leaves no heirs, but his daughter buys a "wife widow" in his name and the girl gives birth to a son Z. Z claims from A's heirs two cows. They must be paid him.

5. LAW OF "BREAKING OF MARRIAGE."

1. By "breaking of marriage" is meant the return of the cattle of the "marriage payment" to the husband by the wife's father or guardian, in order to free her from his ownership.

2. If a marriage be fully "broken" by the repayment of all the cattle and all young borne to these cattle, all children borne by the woman become with her the property of her father or guardian. But—

3. Part of the cattle may be left with the wife's father, by arrangement, to permit one or more of the woman's children being left with her husband as his property. But—

4. On a marriage being "broken," the mother and her guardian can demand that all her children go with her, provided the cattle for repayment of the "marriage payment" are returned with all their young, or head for head, by cattle as good.

5. "Breaking" of marriage can be paid for by :—

- (a) The husband.
- (b) The wife.
- (c) The wife's father or guardian.

6. The husband may sue for breaking of marriage—

- (a) If the girl fails to give birth to a child within two years of marriage.

Note.—The husband, before suing, must have had recourse to the tribal custom of permitting one of his male relations to cohabit with the girl, to support the alleged inability to conceive. That his other wives may have borne children, is no proof in his favour.

- (b) If the girl runs away from him and refuses to return or to live with him.

- (c) If there is quarrelling or ill-will between their families.

7. Misconduct or unfaithfulness gives no claim to "breaking of marriage." The tribal fine of cattle for adultery from the offender is the husband's means of reparation.

8. A wife may (in practice) sue through her father by refusing to live with her husband.

Note.—This is sometimes done in order to be married to another man, the persuasion used to her father being that he will pay more cattle. The father may try to force the girl to remain with her husband by not receiving her and arranging to demand a big "marriage payment" from her lover should she run away to him, sufficient to compensate for the return of all the cattle and their young to her husband.

9. The wife's father may sue :—For husband's default to pay cattle as arranged before the witnesses previous to marriage. In practice he often succeeds in breaking the marriage by enticing his daughter to refuse to live with her husband, if he has been offered a larger price for her.

10. If "breaking of marriage" takes place all the cattle of the "marriage payment" and their young must be returned to her husband. Except—

- (a) The girl is the willing cause of the demand, by refusing to stay with him.
- (b) Or, if there are children, and the wife and her father agree to let one or more child remain with the husband in consideration of an agreed number of cattle being remitted.
- (c) Or, if the wife is old and her children do not make up for her depreciation in cattle-giving-value for marriage.

In this case the husband gets back his cattle and their young less the amount of depreciation, *i.e.*, he gets a number equal to that paid for her and her children with (if she has married again) compensation for children she may be expected to bear. The cattle to be repaid must be those originally paid by the husband, so far as available, and their issue.

Note.—For the proper understanding of the repayment of a "marriage price" it must be remembered that every cow and its young is known to all the Dinkas who are concerned in it as a possible increase of capital if repayment of "marriage price" is made : and that the cattle of a "marriage price" are never kept intact by the father or guardian of a girl, but are divided between his friendly male relations, he possibly keeping only one cow. By this means he ensures :—

- (a) Assistance in repaying the "marriage price" if reason occur.
- (b) Assistance to any of his male posterity, who, after his death may find difficulty in collecting cattle to marry by ; for example, in such a case as his widows bearing children several, or even many, years after his death. (See Law of Lineage.)

And though these cattle are distributed as free-will presents, and generally in return for a former similar consideration, a man will often claim a present in return when his kinsman has received cattle for a daughter or ward.

A Dinka court would only tell the defendant to be generous, and it is important that Government officials should adopt this course also, as they are only free-will gifts, and as these presents and regifts have gone back through the families for generations, it is quite impossible to know which is really "to the good."

Other Laws of Return of "Marriage Payment."

Those referring to matters of divorce are embodied in the above law of "Breaking of Marriage": the others are as follows :—

1. If within the first two years after her marriage the wife dies in child-birth, or fails to give birth to a child, the husband makes arrangement with her father, who substitutes another daughter or ward as his wife, and takes back his daughter (if living), or arranges to return a portion of the cattle and assist him in getting another wife.

This is a compromise, and absolutely no fixed custom can be detailed, but at least one cow must remain with the father from the cattle.

2. If a girl or woman has given birth to a child since her marriage, no claim can be made for any return of cattle on the ground of her death, however recently married, if the child is alive at the time.

3. Should wife and child die in first two years, compromise is again resorted to, the wife's father returning about half the cattle to assist in getting a new wife, or he may offer another daughter or ward instead, if generously inclined.

4. If the wife was married whilst she was still a child there is no allowable claim for "childless" compensation, but sometimes it is made of the free will of her father if the families are friendly, or to avoid quarrelling if a weak family.

Note.—Some of the old people tell me no claim for "breaking of marriage" can be made if the girl was a child when married. But I have doubts of this, because if the girl left her husband and lived with her father, refusing to return, he would certainly not keep her doing nothing, and if she married another, directly the cattle were paid her husband would claim his original payment, but would only be paid her new value, she having depreciated to that extent in his service, and if she had left children with him, he could claim nothing, even under customs for women other than those married young.

6. LAW OF WIDOWS.

1. Under the term "widow" is included not only the wives of a man who is dead but also any woman bought as wife (widow) in his name after his death by his daughter or his widow, in order to raise children in his name.

2. No widow may ever marry again.

Note.—I have seen one case in which the widow was freed from her marriage, after the death of her husband, by repayment of the cattle, but I think this was a distortion of tribal custom, although the deceased's relations said it was no good her remaining his widow as she would not make the sacrifices in his memory, and it was intended to buy a "wife widow" with the cattle paid for her in a new marriage.

3. It is the duty of a widow to raise children to her dead husband's name. This she does by cohabiting with her husband's brother or other of his close male relations.

4. Or should she be beyond the age of child-bearing (and there being no other widows or male relations of her husband), she then, holding his property "in trust," purchases and marries in his name a girl by means of his cows; it is then her duty to arrange for one of her own male relations (there being none of her husband's alive) to cohabit with the girl in order to produce children in her husband's name. She may substitute any man she pleases in default of male relatives; no question can be raised, as the children are in name and rights of inheritance those of her dead husband, and the natural father has no claim on them whatsoever. The girl purchased becomes a wife (widow) and must carry out this law of widows.

N.B.—A woman having no protector and holding property "in trust" would be robbed of all her possessions, so a widow having no heir of her husband to act as her guardian returns to

her father's people until she has provided a son to her late husband ; she then returns to her husband's people when he is old enough to take charge of his property. (See Laws of Lineage and Inheritance.)

5. All children borne by widows are considered those of the deceased husband irrespective of the time elapsed since his death, or who their natural father may be. They are in name, and if sons, in right of inheritance, if daughters, as property of his heirs, his children. (Also see Laws of Lineage and Inheritance.)

7. LAWS OF INHERITANCE.

1. On the death of the head of a family his property becomes a family-fund under the administration of the senior male relations of the deceased, who act as advisers to the senior or responsible heir, and to whom the other heirs refer any grievances.¹

2. The property belongs in equal shares to his sons as co-heirs.

3. If there are no sons his widows, under guardianship of eldest brother or nearest male relation, hold the property "in trust" (*vide* Law of Widows and Laws of Lineage).

4. If there are no widows the eldest daughter under protection of deceased's eldest brother or nearest male relation holds the property "in trust" (*vide* Law of Widows and Law of Lineage).

5. If there are no male relations of deceased the father of a widow (or his heir) becomes her guardian, and

6. Similarly, if the deceased's daughter is holding the property "in trust" (when there are neither male relatives of the deceased, nor the girl's mother living) the father of her mother becomes her temporary guardian.

N.B.—Such guardians would have the use of the cattle for milk, but on a son or sons being born to the deceased's name and coming of age, such son or sons inherit all property.

7. The council arranges all details in compliance with tribal customs :—

- (a) The just and true distribution of the fund.
- (b) Its use in providing wives in turn to each of the sons.
- (c) The addition of all cattle obtained as "marriage payments" for daughters to the fund.
- (d) The appointment of each widow to the correct or a suitable male relative of the deceased for cohabitation : but paying special regard to her own wishes.

8. A widow who is still a child (having been bought young) may be (and generally is) allotted to a son for cohabitation, but she is the deceased's widow

¹ The following statement subsequently communicated by the author may be added here, since it seems to qualify the above in some measure. He says :—"The owner of property (*i.e.*, head of a family) may elect any younger son to be in charge of the family property when he dies, if the oldest son is in his opinion not suitable. This is generally done on his death-bed before the old people of the family as witnesses ; and the oldest son has apparently no appeal : he must serve his younger brother."

and any children she may give birth to later are considered as those of the deceased.

9. In the case of all property having already been expended in providing wives for the children of a deceased man, the male relatives of the deceased who have received various presents of cattle from him from "marriage payment" made for his daughters (as described in a note under Breaking of Marriage, 10) are, under tribal honour customs, obliged to subscribe to a "marriage payment" required for a son of one of his widows.

8. LAWS OF SEDUCTION.

1. Should the offence of seduction be committed with a relative by blood it comes under Laws of Incest (which see).

2. Should seduction be committed with a married woman it comes under Adultery (which see).

3. Should seduction be by force it comes under Laws of Rape (which see).

4. In all cases of seduction the fault is held to lie altogether with the man.

5. A girl (or woman) is liable to no punishment by tribal law for aiding or abetting in the offence.

6. The offended person is the father, owner or guardian of the girl (or woman) seduced.

7. There are three degrees of gravity of offence in seduction :—

(a) Simple seduction.

(b) Seduction from which the girl gives birth to a child.

(c) Seduction from which the girl dies in child-birth.

8. Simple seduction :—

N.B.—A case of simple seduction is not a grave offence among the northern Dinkas, and is seldom brought before Government, but it is most important to make sure that it is not "incest" that is implied in the charge, *i.e.*, that it is not alleged that the offence was committed with a blood relative, even from many generations back, which is a more serious offence.

If simple seduction is proved either by evidence or the declaration of the girl herself, the offender or his guardian must pay a fine to the father or guardian of the woman seduced.

The fine usually is one cow, but in the case of a rich man and a girl of high family it may be increased to three, or even more in a prosperous district.

9. Should the girl give birth to a child—

(a) The child becomes the property of the girl, the natural father having no claim whatever to the child.

Note.—Property in this case is used only in the sense of always going with the mother : the real proprietor is the mother's guardian, who demands a larger "marriage payment" for her in consideration of passing the ownership of the child to her husband with her.

And (b) the seducer is liable to a fine of from one to five cattle.

10. Should the girl die in child-birth—

- (a) If the child lives, as in 9 (a) above, and (b) the seducer is liable to a fine. The fine was, in 1907, eight cattle in a large portion of the tribe.

11. Should the offender so request, he may marry the girl with whom the offence has been committed, and in this case the "marriage payment" covers all fines and also gives him possession of the child, if any; this applies to all cases of seduction.

12. The burden of offence and right to reparation descend respectively to the heirs of offender and offended, if not settled in their lifetime.

9. LAWS OF INCEST.

1. By "Incest" is meant the offence of sexual intercourse between persons related by blood from either the father or mother of either of such persons.

Note.—This is carried back for many generations, and appears to be limited only by the accuracy with which family tradition can trace the genealogy of persons so offending.

As already mentioned this offence is supposed to bring death to one or more of the persons offending or their children. The importance of the "sacrifice of atonement" in this case is that should the girl or one of her relatives die, it is attributed to this sin having been committed, and if the "sacrifice" has not been made, the offender is held liable to a fine for causing death, and a refusal to pay would lead to his family's cattle being seized by the aggrieved family.

2. The offender must supply the cattle for the "sacrifice of atonement."

These are:—one cow to the girl, of which her father or guardian takes possession; one bull to be sacrificed by slaughter; one sheep to the man making the "sacrifice," of which one formality is in certain districts the drinking of the cow's water by him.

3. The offender must pay a fine of from one to three, or even more, cattle, in some districts in addition to the sacrifice cattle. The father or guardian takes the fine.

4. As in other offences, the burden of responsibility for reparation descends on heirs of offender's family, if not settled.

5. Any children born from the offence belong to the father or guardian of the girl, but go with her when married, an increase of "marriage payment" being required on this account.

6. The offence of incest is increased if it includes adultery. Up to eight cows is the fine in the northern districts, and this would be levied in addition to the "sacrifice cattle." But even twenty cattle might fail to compensate and prevent a seizure of cattle in such a case; and should any of the girl's family die it would be attributed to the offence also. (See Laws of Punishment.)

10. LAWS OF ADULTERY.

1. Any man, who, *unknown to and without consent* of the husband, has sexual intercourse with any of that man's wives commits the offence of adultery.

N.B.—A husband may, as seen in other customs described, arrange with any of his male relatives, or in default of them with an outsider, to try and cause his wife to give birth to a child, without offence.

Also a woman holding property "in trust" may, as described previously, arrange with a man to try and cause the "wife-widow" (purchased by her for her late father or husband with his cattle) to give birth to children, without offence.

2. But a man who has sexual intercourse with a widow (other than as provided for in customs mentioned above) commits adultery, and her guardian demands the cattle fine from offender to be held "in trust" for his ward, the heir who is a minor, or may not yet be born.

3. All children, the result of adultery, become the property of the husband; or if borne by a widow are held "in trust" by the widow and the guardian for the heir, whether a minor or not yet born.

4. The woman implicated in the offence of adultery is liable to no punishment by tribal law. If a husband finds his wife unfaithful, and ill-treats her, and she refuses to live with him and goes to her father or guardian, repayment of the marriage cattle is probably arranged; but a man cannot demand that the marriage cattle be returned him as long as the woman is willing to remain in his enclosure. His only mode of reparation is the cattle fine for adultery from the offender's family.

5. The fine for adultery in an average district and with people of average possessions is about five to eight cattle. But see Law of Punishment.

11. LAW OF RAPE.

1. Rape must be understood as the actual doing of the offence of sexual intercourse, against the will of the woman, by force by a man.

2. It is increased in gravity by the offence being committed against—

(a) A young girl.

(b) A married woman.

3. It is still further increased if it comprises an offence against the Laws of Incest.

4. In nearly every district, with the exception of those north of Ahmed Aga, the offence of rape would bring about the killing of the offender by the brothers or kinsmen of the offended girl, and a raid for seizure of all his cattle. It is futile to try and define any fixed punishment. What actually occurs if the man escapes is that his family (if they have not had all their cattle taken because their power is relatively greater than that of the offended family), try to arrange compensation of cattle to turn the wrath of the offended family from him, so that he may return to his country in safety. In some cases, a marriage is arranged, with a large "cattle payment," between the offender and the girl. In the northern districts, in the most recent authentic case, the man was not killed owing to fear of the Government and to his having hidden himself till the family arranged a cattle compensation.

12. LAW OF THEFT.

1. This only includes petty thefts, such as of a sheep, for food in a famine time; the seizure of cattle being looked upon as a war raid.

2. The punishment is that the stolen article, or a similar one at least as good, must be returned. If the thief has no property at the time, nor his family, a promise of payment on receiving the first marriage payment for a girl of the family is given and accepted.

Note.—All kinds of *theft* are very rare. The *raiding* of cattle is less in each district towards the north, the aggrieved parties, being more sure of getting their rights and cattle, are seldom raided anywhere except with some reasonable provocation.

13. LAW OF BODILY INJURY.

1. All bodily injuries are compensated by cattle.

2. A rough scale which seems to hold throughout the tribe is:—For injury to head, 1 cow-calf; for broken arm, 1 cow; for broken leg, 5 cows. These refer to disablements. Lesser injuries, by sheep.

3. If the injury to head is followed by serious results such as paralysis, which is specially looked for, the fine is half the "death fine" which holds good in that district at that time.

4. Refusal to pay "injury compensation," is liable to result in deliberate damage to offender or his family in retaliation.

5. "Injury compensation" must be made formally and "peace sacrifice" must be offered, the offender supplying the bull or the number of sheep required, both parties making a feast and dividing the meat equally.

14. LAWS OF KILLING.

1. Any man who kills another, whether by mistake or accident or on purpose in anger, is liable to the "death fine" in force in the district.

2. The "death fine" of the tribe is said to have been originally 100 cattle. There is a general tradition of its reduction to 80 cattle, but no district ever pays that number now; from 20 to 30 would in most cases be accepted, if from ordinary accident or sudden anger; but if a planned waylaying and killing, it might not be accepted, and the only remedy in this case is to wait until one of each family is killed; then the "old people" can meet with better chance of arranging a "peace sacrifice" and peace-making.

3. The fine for killing is paid to the next of kin, male, of the dead man, *i.e.*, his father or guardian if still unmarried, or if married, to his heir or his heir's guardian.

4. On the killing taking place, the offender generally hides or goes to another tribe for shelter, and his family try, if possible, to arrange a "peace." If at the

meeting, the family of the offender refuses the decision given by the "seniors" of the people, a "blood feud" is made and killing by stealth goes on until peace is made. This system of "blood feud" lessens in proportion as the district is to the north, where they are sure of Government punishing the offender and fear punishment themselves for retaliation.

5. If a girl or woman is killed the tribal compensation is (said to be) eight cattle. The reason for this great difference between the case of a man and a woman is that nobody would kill a woman on purpose. This may possibly have been laid down in some past period, but it would not hold good in any part of the Dinka tribe now.

If a woman was killed by one not of her own house, retaliation would be made by a blood feud against the offender's family, unless they offered compensation of at least as many cattle as the girl was valued at for "marriage payment." Another likely form of settlement amongst them would be to give a girl to the aggrieved family, who would take possession of any cattle paid for her in marriage, she becoming their property for this purpose. One of the aggrieved family would not be allowed to marry her, as there was blood between their families.

6. If a girl or woman is killed by her father, brother, or any other whose property she is, there is no tribal authority to demand explanation or inflict punishment.

Note.—Also the loss is his, and it is argued that it must have been an accident, as no Dinka would harm a cow, much less a woman, whose value may be many cows.

7. If a girl or woman is killed by her husband it is treated as an accident and misfortune to the husband, but he may have to pay a cow or more to propitiate the girl's family and stop talk.

15. LAW OF PUNISHMENT.

1. A punishment in the tribe takes the form of compensation by cattle, or in lesser offences by sheep.

2. It is always paid to the offended party by the offending person himself if he is the head of a family.

3. But his family also are responsible for the collection of the necessary cattle if he is a minor.

4. The burden of responsibility for the payment of the required number of cattle descends on his heirs, and

5. The right of claim to (or for the completion of) payment of fine descends to the heirs of the offended party.

6. If a payment cannot be made at once, a promise of payment from the "marriage price" of one of the daughters of the family of the offending party is made. Sometimes the girl herself is handed over as hostage for the payment.

7. There is no leader who can give a death sentence, nor order any tribal fine for any offence to be paid to him, nor otherwise than as stated above.

8. The offences which bring about the killing of the offending man if caught in the act are those against women, and in the southern districts to a much greater extent than in the northern.

9. The following fines are practically declared in each district for the time being and known to the people of the district. They vary as the wealth and condition of the district periodically, and are not the same necessarily in any two districts:—Fines for injuries, seduction, rape, adultery, incest, killing, and sacrifices for “incest” and “peacemaking.”

OATH (FORM OF).

The oath of the tribe is taken on the sacred spear (*Tang-Yuat*) of the district. Lying, after taking oath on the spear, is so much feared that I have seen cases of alleged injury withdrawn absolutely on the defendant taking the oath on the spear that he is innocent.

WILLS.

A man has no power to “will” his property otherwise than as stated in these laws. He may give it before death; but even then his heirs would insist on its return to them, and would be supported in this by the tribal court.

SOME EOLITHS FROM DEWLISH, AND THE QUESTION OF ORIGIN.

BY C. J. GRIST, M.A.

[WITH PLATES XX, XXI.]

THE worth of the Eolithic problem depends very largely on the help it can bring to the task of tracing the history of the human race to its beginnings. It is, therefore, unfortunate that the geological age of the typical eolithic drifts of this country cannot be fixed with certainty. The question of the age of an eolith has become entangled with the question of its origin; and the trend of discussion has been to seek a geological solution for every difficulty.

This, I think, makes it desirable to draw a distinction. The question of the age of an eolith seems to me to resolve itself into a consideration of the condition of a piece of flint, and its geographical environment—a geological question, purely and simply. The question of its origin—whether certain chippings are, or are not, the product of a primitive industry—necessitates our taking the mind of primitive man into consideration, as well as geological data.

The eoliths to which I invite attention in this paper lend themselves very readily to this method of treatment. They were found in close association with the *Elephas meridionalis* deposit of Dewlish in Dorsetshire—described in the *Memoirs of the Geological Survey* as “undoubtedly of Pliocene age.”¹ Accordingly, the paper is divided into two parts.

1. ARE THE EOLITHS OF PLIOCENE AGE?

(a) *The Deposit*.—The Pliocene deposit of Dewlish is situated in a fissure or trench measuring about 100 feet long and 12 feet deep, which crosses obliquely the summit of a narrow chalk ridge. This ridge runs in a north-south direction. The east side of it slopes gently towards a dry valley; the west forms a steep scarp descending to a brook a hundred feet below. Some hundred yards to the north of the trench (*i.e.*, in the direction of the highest ground of the county) there is a wide and shallow depression. The deposit may be said, therefore, to occupy a singularly isolated position.

The two slopes of the ridge differ in character as well as in contour. That on the east is capped with loam and utilised as plough land; the scarp is covered with grass, through which the bare chalk can be seen in several places. A banked up hedge runs along the crest, forming a boundary between the grass

¹ *Pliocene Deposits of Britain*, p. 206.

slope and the plough field, and, as a consequence, the trench is divided into two parts, to which I will refer later on as the scarp pit and the field pit.

The earliest notice of the deposit takes us back to 1814. In the *Monthly Magazine* of that year, a Mr. Hall records the discovery of some elephant remains on the scarp side of the hedge. I quote one paragraph of his paper:—"There is a hill in the parish of Dewlish which was always supposed to be formed of chalk; only but last summer, about 100 feet above the level of the foot of the hill, some sand was observed to be drawn out by a mouse."

Nothing further seems to have been observed till 1883, when an elephant molar was found at the same spot by Mr. Kent (senior). In 1887, Mr. Mansell Pleydell and the Rev. O. Fisher interested themselves in these finds, and made an excavation on the scarp. Then it was the trench and the true character of its contents came to light. On a subsequent occasion they opened up the trench on the plough field side of the hedge, and found that it terminated in an "apse-like end." A description of these excavations, together with various theories as to the origin of the trench, is given in the *Quarterly Journal of the Geological Society*,¹ and also in the *Geological Survey Memoirs*.² Mr. Mansell Pleydell says:—"A very remarkable circumstance is that there is not a trace of a gravel terrace or the slightest outward indication of the existence here of anything but chalk." This is noteworthy, for it emphasises what I have already twice mentioned—the isolated position of the deposit, and makes it clear that in solving the question of the age of the eoliths we shall not be hampered by any hypothesis of later drifts.

The nature of the contents of the trench will be seen by the sections given.

Mr. Hall's section:—

	Feet.
1. Chalk about	3
2. White clay „	2
3. Sand „	3
4. Chalk „	2
5. Gravel with large flints „	3
6. White clay „	2
7. Chalk „	?

Mr. Mansell Pleydell's section:—

	Feet.	Inches.
1. Mould about	0	3
2. Chalk rubble „	0	10
3. Fine impalpable sand and flints. Remains of elephant	3	0
4. Sand and ferruginous gravel ... ..	...	?
5. Flint material, water borne ... ..	...	?
6. Sand, the lower portion with different sized flints ... ..	...	?
7. Chalk ... ..	...	?

¹ *Quarterly Journal, Geological Society*, 1888, 1905.

² *Memoirs Geological Survey, Dorchester; Proceedings, Dorset Field Club*, 1904.

The Rev. O. Fisher, in his notes on the scarp pit, says:—"Angular gravel impacted in an extremely fine sandy silt; and in this were numerous fragments of ivory, disseminated, forming a constituent part of the gravel much as other stones do. Towards the bottom of the deposit I found the gravel much coarser and subangular, and here I met with a portion of a nearly worn down molar . . . and some curiously polished flints."

The trench has yielded in all:—

Nine molars, with numerous isolated plates of others,
Several limb bones,

Several tusks and much scattered ivory. In some places the fragments of ivory were so numerous as to predominate over the other materials.

(b) *The Eoliths.*—Early in 1906 I happened to be within a few miles of Dewlish, and out of curiosity walked over to see the deposit. On enquiring for the Elephant pit, as it is called in the village, I was told it was at the top of the chalk bank. There was little to locate its whereabouts, for it had been filled in again. I saw a few iron-stained flints in the turf, and that was all.

I struck homewards across the plough fields of the ridge, and there I noticed that while the surface in general consisted of loam with black and white flints, the corner near the hedge was thickly strewn with coarse, angular flints of a peculiar orange colour. These attracted my attention, because the colour matched exactly with that of the flints at the scarp pit on the other side of the hedge. After examining the spread more closely I lighted upon four eoliths. Though appearances connected them with the "Elephant pit," I was much puzzled to account for their presence on the surface of the plough field. (I was not at the time acquainted with the details of the excavations.) To clear up the difficulty I consulted the workman who had been employed by Mr. Mansell Pleydell. He is the gravel digger and road contractor of the village, and knows the ground "for miles round." He told me that after the work of exploration had been completed most of the material from the trench was put back again; the remainder was spread upon the surface of the plough field. Hence the patch of orange-stained flints by the hedge. For confirmation, he picked up several flints and pointed out the fractures which had been made by the pickaxe when he "grubbed them out of the concreted stuff in the pit." Mr. Kent, whom I consulted with later on, was equally decisive as to their origin; and he lives within sight of the pit, and farms the land on which it is situated.

There is a woodcut in the *Memoirs of the Geological Survey* which shows the position of the deposit quite clearly. It gives the open trench in the field, close to the hedge, as it appeared during the excavations of 1887. It is just at this place where the orange-stained flints are most abundant at the present time. On a subsequent visit I found two more eoliths in the same spread.

I think there was reason to believe that all these eoliths were associated with

the trench. However, one of them—a flake—was paler than the rest, and quite white along the edge, which pointed to a possibility of a mingling of surface material with trench material. To eliminate this source of doubt I arranged, through the courtesy of Mr. Kent, to open the trench in the following spring (1907), and selected for the purpose the scarp portion, for there the capping of turf and the intervening hedge and bank had formed an effectual barrier against recent drift from the plough field. Any ferruginous gravel met with in the scarp pit must have formed part of the original undisturbed deposit. On that point there is no room for doubt.

In order to fix upon the most likely spots for sampling the contents of the trench, and to become better acquainted with details, I secured the assistance of the workman referred to above. At a later date (August, 1908) more holes were dug in this pit.

To put the results briefly :—

- (a) I found eight eoliths in the trench among the ferruginous flints.
- (b) The general appearance of the contents of the trench confirmed the belief that the eoliths found previously in the field had been derived from the deposit.
- (c) Some of the ferruginous flints of the trench had been deprived of their staining.

These results, viewed in the light of the 1887 sections as given above, lead me to conclude that the eoliths are undoubtedly of Pliocene age.

With reference to the staining, I may add that I have since met with scraps of flint drift carrying the same peculiar orange stain in the lowlands well beyond the chalk escarpment;—in Dorset, in Hampshire (between Alton and Selbourne), in Sussex (at Berwick), and in Kent (at Ightham). I have also met with stray bits on the chalk in Hampshire (above Ropley), in Wiltshire, and near Terry's Lodge on the Kent plateau. It is noteworthy, too, that one of the molars from the Dewlish scarp pit, now in the museum at Cambridge, is marked with this orange stain.

The stain varies in strength considerably. Occasionally it is very weak, which suggests decoloration. As an experiment I placed a few specimens in a 1 per cent. solution of oxalic acid, and some others in a 2 per cent. solution. In four months the latter became almost white; the former lost colour, but not so much. Oxalic acid was chosen as being a rough and ready approach to the action plant acids.

2. THE QUESTION OF ORIGIN.

I must here offer a few words of explanation. When the field eoliths were found there was a good deal of uncertainty in my mind as to their origin. They bore some resemblance to the eoliths of Kent, and the chipping was accepted as

human work by Mr. Harrison and Mons. Rutot. On the other hand there was at the time, both in England and France, a strong outburst of objection against eoliths in general. Pre-paleolithic chipping, it was urged, could be attributed to natural causes. Under these circumstances it seemed desirable to look at both sides of the question in the light of a to-and-fro searching among nature's handiwork and man's. This part of the paper is the outcome; and I have accordingly arranged the matter under the sub-headings of Natural Causes and Human Work.

A. *The Theory of Natural Causes.*

1. The origin of the distinction between paleolith and pre-paleolith can be traced to the classification put forward by Mortillet, in the year 1869.¹

At that time, attention was focussed upon cave deposits, and river drifts of the Somme valley type. With the single exception of the flints submitted by Bourgeois, in 1867, there was not in evidence even a vestige of an earlier industry. Mr. Harrison's plateau flints were not put forward till some twenty years later, and it was not till then the term *eolith* came into use.

Mortillet says²:—"At the base of the quaternary deposits man's industry . . . is reduced to a single instrument which is at the same time a weapon and a tool—*C'est l'instrument primitif*. This primitive instrument, the most ancient witness of the existence of man . . . is the *coup-de-poing*."

And the *coup-de-poing* thus became our base line of the Paleolithic age.

There is proof enough now in our museums that this confident language was unwarranted. The *coup-de-poing* is too cleverly worked and too widely distributed to be any longer accepted as the type of the "primitive" instrument of the human race. We must accept it, I think, as a standard pattern in paleolithic industry—reached through pre-paleolithic types and by pre-paleolithic efforts.

2. It is urged³:—"There is no reason to conclude that pre-paleolithic man lived in this region of the world . . . paleolithic culture may have been introduced ready made from more southern areas." "Perhaps in Pliocene times our first ancestors occupied some other part of the globe more or less distant from the Europe of to-day." "Eoliths are *u-typiques*" and should not be accepted as archaeological documents "unless they are accompanied by some well-established certificate of origin, *e.g.*, *un foyer, une sépulture, un atelier*," etc.

All objections of this kind run counter to every-day experience; and also to an order of procedure which has the warrant of historical evidence. We do not, as a rule, search for our burglar before we have evidence of his handiwork. Similar objections were raised sixty years ago, and in much the same language, against paleoliths and paleolithic man. "Everything leads us to believe," said Cuvier,⁴

¹ *Le Préhistorique*, G. et A. Mortillet. Paris edition, 1900. Preface.

² *Ibid.*, p. 131.

³ *Journ. Anthropol. Inst.*, vol. xxxv, 1905, p. 327; Dechelette, *Manuel d'Archéologie Préhistorique*, Paris, 1908, p. 32.

⁴ Cuvier, *Discours sur les Révolutions du Globe*, ed. Didot, 1858, p. 86.

with reference to the researches of Boucher de Perthes, "that the human species did not exist in the area . . . I do not wish to conclude that man did not exist at all . . . he might have inhabited some other parts of the world from whence," etc.

Boucher de Perthes' pieces of evidence were the neoliths from the tourbières. In these he recognised work which postulated earlier efforts. Had he waited for certificates of origin, in all probability the world would still be in ignorance of his discoveries.

Our eolithic problem is in a very similar position to-day.

3. We are told¹ that eoliths are sometimes found in paleolithic drifts; "which breaks down the argument for a pre-paleolithic age," and indicates natural origin.

Let us recollect that paleolithic drifts are the outcome of accumulations and redistributions extending over long geological periods, during which valleys have been raised and depressed; during which, too, running water, carbon dioxide, chalk, and organic acids may have influenced the mineral conditions of a fractured flint quite as much as iron and manganese. I have in mind here the state of things in the Thames valleys, where paleoliths can be found in association with quartzites and greensand chert, eocene pebbles and chunks from the chalk downs, and fractured flint in all sorts of mineral conditions. I have in mind also the drifts of the Isle of Wight, where beheaded valleys are numerous. With surface drifts and surface finds on high ground the contention is still more illusory. We have but to go to Central France to find paleoliths in association with *neoliths*. Mortillet² tells of one district in the Vienne where paleoliths have been picked up by hundreds on the surface of the soil; of another, in the Allier, where thousands have been turned up by the plough. At Pontlevoy, he says, the peasants used to take their little bags of *silex taillés* to market, along with the other produce of their fields. Near Sarlat in the Dordogne, a baker used to set out with his cart full of loaves and return with it laden with stones. Mr. Harrison, himself, has never equalled that with his eoliths of the Kent Plateau.

Mons. Rutot, making reference to parcels of these surface implements sent on to him for examination, says³:—"Appearances are very deceiving. Chelleen, Acheuleen, Mousterien, are lamentably mixed up with the industry of the polished stone age. And if occasionally there seem to be signs—patine, polish, abrasion—which promise a means of discrimination, we soon find ourselves at fault, for pieces evidently neolithic are met with carrying the very marks we had hoped to see reserved for the paleolithic."

If these are the difficulties encountered when paleoliths and neoliths occur together, to urge "association" as evidence for natural causes can only lead to confusion of ideas.

¹ *Journ. Anthropol. Inst.*, vol. xxxv, 1905. *Man*, April, 1908; September, 1909.

² *Le Préhistorique*, Mortillet: ed. 1900, pp. 571–575.

³ *Bulletin de la Société Préhistorique de France*, Av. Mai, 1908.

4. For evidence of natural causes, as distinct from evidence of age, the theory relies mainly on the work of machines, which are obviously open to the preliminary objection that they are non-natural causes. With such ample opportunities as we have for discovering what nature can do, and has done, why should we have recourse to a hypothetical argument based on the work of a machine? This machine does so and so; nature is more powerful than a machine; therefore nature can do likewise. Hence the eoliths.

Fortunately the validity of the argument can be tested by field evidence. Granted that nature makes eoliths, then eoliths will be found where nature satisfies the conditions laid down. And since nature does not confine her operations to any particular age, they will be found as readily where we believe primitive man cannot have been present, as where, in paleolithic drifts for instance, we have traces of his presence. And not in flint drifts merely; for the eoliths of Tasmania and South Africa are of different material.

"Field evidence," says Mr. Warren,¹ our foremost exponent of Natural Causes, "has no bearing on the question at issue . . . It is a knowledge of the fracture of flint under different conditions that we require." With this I disagree; for, surely, it is quite possible for the conditions determining a fracture to be the same whether nature or man exerts the pressure or strikes the blow. For example,—a man may obtain an eolithic fracture, or a paleolithic, by throwing pebbles about, on a sea beach; nature, too, when the wind blows a gale. There is an excellent imitation of a paleolith in the Cambridge Geological Museum, which is said to have been made by nature on the beach near Sheringham.

To say field evidence has no bearing on the question at issue, seems to me to ignore nature's own evidence of her handiwork. To say that a knowledge of the fracture of flint will decide the issue is to ignore the evidence of design, which is the distinguishing feature of the work of man.

5. Mr. Warren is of opinion² that eoliths may be produced by pressure: in soil creep, the foundering of drifts, the stampeding of animals, etc. I will mention a few places where one may find, in plenty, naturally fractured material with clear evidence of creep and pressure:—The talus of chalk pits, the scarp drift of chalk hills, the pipes in the railway cuttings between Alton and Alresford, the valley bottom at Candover, the flint beds on the hill above Teignmouth, the Permian *débris* at Shaldon, the shingle beach between Langney point and Cooden, the chalky gravel near the railway line facing Boxhill, the broken flint beneath the loess on the chalk plateaux west of Evreux, the flint *débris* capping the cliffs at Ste. Adresse. I have searched for typical eoliths in these places and have found nothing to lend credence to any theory of Natural Causes.

One other place may be mentioned—Newlands Corner, in Surrey. There, close to the scarp ridge of the Downs, we have an extensive deposit which is worked

¹ See Mr. Warren, *Journ. Anthropol. Inst.*, vol. xxxv, 1905.

² *Ibid.*

to supply road material. It consists of a medley of clay, and sand, and flints of all sizes from small eocene pebbles to brecciated masses two feet in diameter, and a sprinkling of greensand *débris*. It appears to be an old sludge deposit, for it has points of resemblance with the muddy masses one sometimes sees in the Alps near the snowline, or by the foot of the cliffs in the Isle of Wight and at Cromer. Stones stand upright in clay, there are traces of former stream action within the mass, and there is a trailing of gravel leading into the valleys below. If the deposit were in the North of England it might pass for a patch of Boulder Clay. Whatever the origin, it is certainly the sweepings from higher ground no longer existing.

During the gradual removal of this deposit, extending now over many years, the sections have exposed innumerable examples of foundering and squeezing. Sometimes I have seen the pieces of a flint that has been fractured by pressure lying separated by half an inch of sand or clay; but never among the pressure fractures an eolith. The nearest approach to human work was found on two rolled flints that had not been chipped within the deposit.

These resemble, somewhat, a paleolith found at Knowle Hill farm.

6. With regard to stampeding,¹ we may ask:—Of the thousands of neoliths picked up on our chalk downs, carrying in their rust marks evidence of pressure by the plough or horses' shoes, how many can be said to bear out this contention? True, a notched flint is often found, but it usually cuts the hand of anyone who uses it.

7. The action of sea waves is less likely still to be the cause;² for every eolithic flint on a beach is accompanied by myriads of well-formed pebbles. And this being so, how is the absence of pebbles to be explained, say, for example, in the eolithic spread on the Kent Plateau, where mineral conditions may be taken as a guide?

8. Across the Channel, the case for natural causes rests mainly on the observations made by Mons. Marcellin Boule in the cement mills of Mantes, the inference being that eoliths may be produced by torrent action.

Mons. Boule says³:—"To eliminate the flints from the chalk sludge, the water is put in movement by a horizontal wheel to which are suspended cast-iron harrows plunged to within 2 c.m. from the bottom. The wheel, five metres in diameter, makes sixteen turns a minute; and the speed near the circumference is therefore about four metres a second." "Among the flints withdrawn at the close of the operations may be found certain specimens which might be taken to be the result of finished workmanship with retouches methodical and several times repeated." Flints have been found recalling *grossièrement*, scrapers of Magdalenien type and even notched flakes of neolithic appearance.⁴

¹ See Mr. Warren, *Journ. Anthropol. Inst.*, vol. xxxv, 1905.

² Sir John Evans, *Congrès Préhistorique*.

³ *L'Anthropologie*, Paris, 1905.

⁴ *Manuel d'Archéologie*, Dechelette, p. 30.

In examining this statement we have three factors to consider:—(a) the sludge; (b) the speed; (c) the harrows.

- (a) Natural sludge streams move slowly, even where the gradient is steep: for the reason that the carrying of the load consumes the greater part of the energy of the flowing water. A natural sludge stream with a speed of four metres a second may therefore be dismissed at once as a physical impossibility.
- (b) In a river, the velocity of the current depends chiefly upon the gradient and the volume of water, and the transporting power of the current varies as the sixth power of its velocity. With a central surface current of two feet per second, the bottom current would be quite able to move sand.

Now M. Boule is of opinion¹ that “the torrential force of the immense quaternary rivers must have been greater than four metres a second.” He has in mind no doubt the rivers rising in the plateau between Mons and Lille. Here, neither the appearance of the eoliths nor the gradient of the river beds is suggestive of torrential force answering to M. Boule’s description.

- (c) The iron harrows have a regular outline; are rigidly fixed to a frame; revolve with uniform velocity along the same course; and strike against stones suspended in the load, with some degree of regularity; an assemblage of conditions not met with in a river. There, the shocks are caused by stones irregular in outline; movement is spasmodic, and uncertain in direction, because of cross currents in the cailloutis, and the friction of the bed. Moreover, the striking stone is checked in its course by the stone which is struck, and there is a tendency to revolve after the impact. In brief, the chances of regularly distributed blows as against fortuitous shocks must be very remote indeed.

The imitations of Magdalenien and neolithic scrapers included in the flint residue emphasise the non-natural character of the work. It is further emphasised by the results of some experiments carried out in the Ardennes,² where an eolithic spread has been found intact under the peat capping of Hautes Fagnes. Messrs. Munck and Ghilain working independently have found that the torrents rising in the plateau cause eoliths to *lose* their characteristics by the time they have travelled two or three kilometres.

9. Let us now approach this question of river action from the opposite point of view.

It must be admitted, if river action is indeed capable of producing eoliths, that eoliths will be found in all river gravels, and in number bearing some ratio to the volume of the gravel. A section of river gravel over 600 yards long and 10 to 18 feet high should therefore supply a considerable quantity of eoliths.

¹ *L'Anthropologie*, Paris, 1905.

² *Congrès Préhistorique de France*, 1907.

Such a section may be seen at Kingston Hill. This gravel working stands, at 178 O.D., on a thin remnant of the Bagshot sands, well above the paleolithic terraces, and well out of reach of the brick earths and other complications. It is true river gravel, with much current bedding, and forms part of the Old Thames bed. Rarely have I found here any fractures suggestive of human work. On the contrary, a comparison of characteristic samples of the gravel with the eoliths of M. A. Rutot and Mr. Harrison and with these from Dewlish, shows that river action tends to obliterate eolithic features. This is made all the more apparent by examining the surfaces of the flints at various points of the section. At the south end, for instance, gravel gives place to sand, which implies a slackening of the current and the probable presence of a backwater. Here the workmen have found blocks of tuberos flint which appear to have been torn bodily from the chalk, and afterwards carried down the stream for at least the distance separating Kingston Hill from the Surrey Downs, presumably by ice or by the roots of trees. The fracture surfaces on these blocks are all clean cut and sand polished, without any sign of pounding. Fracture surfaces of a corresponding origin which are found in the gravel are almost invariably bruised and battered.

10. I will close this part of the paper with a reference to the Alderbury gravels—so often held to confirm the theory of natural causes.¹

These gravels cap a hill (325 O.D.), and the working sections run across it. On the west there is a steep descent to the Avon Valley 160 feet below; on the east a descent towards Dean. The high ground away north and south is completely cut off by wide transverse depressions. Beneath the deposit is a buffer of tertiaries.

What is the origin of the gravels?

The north section when I saw it first had the appearance of being river gravel. One seldom sees clearer traces of river action in low-level deposits. The paleolithic gravels of Knowle Farm offer a decided contrast in this respect.

Midway down the section, and crossing it horizontally, was a seam of pale clay where signs of river action were very distinct—stones, sand, and clay being beautifully graded. Below the seam there was also evidence of grading. Above it grading was not apparent, and there were festoonings; but this is often the case in the upper parts of old river gravels. In the Somme Valley festoonings are very conspicuous.

At a later date (January 3rd. 1907) I made the following notes of two portions of this section :—

						Feet.	Inches.
(1) Black loamy soil	...	...	...	...	about	1	0
Angular gravel (grading not traceable)	...	...	...	...	"	4	0
Yellowish clay	...	...	...	...	"	0	4
Whitish clay grading to sand	...	...	...	...	"	1	0
Gravel, dark red in colour; well graded	...	...	...	...	"	5	0

¹ *Journ. Anthropol. Inst.*, vol. xxxv, 1905; *Man*, April, 1908.

							Feet. Inches.
(2)	Black soil	...	...	...	...	about	1 0
	Angular gravel (grading not distinct)	...	...	...	...	„	4 0
	Whitish clay	...	...	...	...	„	1 0
	Sandy clay and sand	...	...	...	...	„	0 6
	Gravel, dark red, well graded : stones lying with						
	their long axes, horizontal	...	...	...	...	„	4 0
	Talus	...	...	...	...	„	0 0

There were little funnel-shaped pockets along the clay and sand band, which indicated by their contents that they had been formed at the time the clay was deposited by the stream, thus precluding any hypothesis of subsequent foundering of the underlying gravel. Sagging on the east and west edges of the section was very probable.

Dr. Blackmore tells me eoliths occur at various and uncertain depths. The very dead white, unstained ones come from the seam of clay.

In May, 1908, work had been stopped on this side and the face was hidden with talus. The opposite face showed river gravel of a dark red colour.

11. We have then, at Alderbury, to account for the presence of eoliths in the gravel of a river far older than the Avon and the Test. We have, also, to recollect that paleoliths and pleistocene remains are abundant low down in the valleys of these two rivers. We cannot but conclude that the Alderbury eoliths, especially those from below the clay seam, are very decidedly pre-paleolithic.

Turning to what has been said of Alderbury in support of the theory of natural causes we find :—

- (1) Prof. McKenny Hughes looks upon the deposit as an example of soil creep and foundering from higher ground, and suggests that the eoliths may have been formed by pressure, etc., in the process.¹
- (2) Mr. Warren adopts this explanation and adds :—“ It is interesting to note that many of the eoliths found here show little or no signs of water abrasion.”²
- (3) Mr. Worthington Smith, who has stated frequently and emphatically that human work of a Pre-paleolithic age does not exist, says of one Alderbury eolith sent to him for examination :—“ This is a good bulbed flake with very skilful lateral paleolithic flaking.” Of another, “ a still finer piece work doing duty as eolith in the Blackmore Museum.”³

12. The question may arise :—What is the origin of the theory ? On this point the history of the movement is very suggestive.

The objections now urged against eoliths and eolithic man were urged fifty years ago against paleoliths and paleolithic man, as the following phrases used at

¹ *Proceedings Cambridge Philosophical Society*, vol. ix, Part II.

² *Journ. Anthropol. Inst.*, vol. xxv, 1905.

³ *Man*, April, 1908.

the meetings of the Paris Anthropological Society in the year 1860 will testify¹ :—
 “Need of positive proof; land slips; considerable number of flints in one place: striking together of neighbouring flints in the same torrent; flakes knocked off by a workman’s pick; fortuitous shocks; rolled flints.”

It is evident that the theory of natural causes was in existence at least twenty years before the eolithic problem made its appearance.

B. *Are the Dewlish Eoliths of Human Origin?*

1. Let us glance for the moment at the process of flint flaking, as it is carried on to-day at Brandon.

A block of flint is quartered to obtain a fairly flat strike face. Then a series of flakes is struck off round the sides of the quarter, then another, and so on till only a useless core remains. On the “outside” flakes we find (1) a fragment of the strike face; (2) a smooth shell-like fracture springing from the point where the blow was struck; and, as a rule, (3) a slight splintering or *esquillement* near the point of origin of the fracture. The “insides” have the same characteristics, and in addition, (4) a concavity left behind by the previous removal of a flake.

By the constant repetition of this combination of marks we find it possible to say of a flint flake :—This is the product of human design and not the result of nature’s fortuitous shocks.

Flints bearing these evidences of design are so numerous in our chalk districts that after awhile one is inclined to tire of giving them more than a passing notice. They are very common too in paleolithic gravel pits, where, save shapely specimens—fit companions for the *coup-de-poing*—they are usually cast aside as lumber.

2. They may on the contrary lead us to wonder what is the date of origin of the flaking industry. Taking this latter course, which is the course I wish to follow up here, we search among the classifications of the prehistoric. So far as I know, M. A. Rutot’s is the only one that makes any reference to the matter.²

In his Quaternary industry the Chelleen *coup-de-poing* period is preceded by a Strépyien period, and that by a Mesvinien, associated with *Elephas antiquus*, the data being supplied by the relative positions of the deposits in the valley of the Trouille.

M. Rutot says the Mesvinien is eolithic. Dr. Hoernes (*Diluviale Mensch in Europa*)³ and other authorities cited by him prefer to call it paleolithic, and Chelleen. Eolithic, or paleolithic, is quite immaterial to our purpose. It is, all the same, “human,” and very early Chelleen, if not pre-Chelleen.

This Mesvinien industry includes a large proportion of flakes characterised by the same marks as our modern “Brandons.” Though the work may be less skilful,

¹ See also *Les Ancêtres d’Adam*, Victor Meunier (Paris, Fischbacher).

² *Le Préhistorique dans l’Europe Centrale*, Rutot.

³ *Der Diluviale Mensch in Europa*, Braunschweig, 1903, p. 195.

the number of flakes removes any supposition that they were produced otherwise than by people possessed of the knowledge of flaking.

3. How was that knowledge acquired? Primitive man was just as powerless to create the necessary "ideas," as modern man in the making of an aeroplane. For "Man's imagination does not create; it can only reproduce and combine its own experience." There was nothing in nature to suggest the pattern. On this score the rude inventors of the flake process compare not unfavourably with the scientists of the aeroplane.

4. Man could only have acquired the knowledge of the process through previous experience in flint chipping. And to judge by the complicated nature of the process, he must have been able at the time to think over his experience, and draw the inference that such a course would economise both time and material.

This, taking the mind of the child as our guide in the matter, he could not possibly have done had he not already passed through the early stages of mental development. It is an every-day occurrence to find boys, already expert in imitating a process, who are quite incapable of making a simple inference which would lead to an improvement upon it. Boys apart, our own experiences in flint chipping point to the same opinion. And with us there is not the added difficulty which the primitive savage had to overcome—effect of environment and force of habit.

It seems incredible, then, that man could have discovered the process of flaking had he not already gained considerable practice in the use of flint.

Such practice could only have been gained in areas where flint was ready to hand: and moreover in pre-paleolithic times.

5. The flakes were fashioned for the purpose of serving the daily needs, and these needs were not new. Hence we may look upon any signs of usage we happen to discover upon them—any frequent repetitions of some well-marked feature, for instance—as a clue to human work on flints of a pre-paleolithic age.

6. Man's chief need was water. Should we therefore find any well-marked paleolithic features many times repeated on flints of our pre-paleolithic gravels, we may say:—this is in all probability the work of man. If in the next place we find a marked absence of these features among the fortuitous shocks of nature, then, I think, we may go further, and say:—this is indeed the work of man. We may grant that it is quite possible for the shocks of nature to imitate on a fragment of flint some one feature of man's work; that interpretation is no longer possible when we see the same features reproduced again and again in flint drifts which we have reason to believe are contemporaneous with man.

7. One of the commonest marks on paleolithic and neolithic flakes of the Brandon type is the concave notch. Mortillet found it so common that he named such flakes, in consequence, *coche grattoirs*. The notch is also common on *coups-de-poing*, both gravel derived and surface implements. I have seen it too on a strike-a-light of the last century.

If we clutch one of these flakes or *coups-de-poing* in the way that best fits the right hand, the notch will be seen near the opposite end, more often than not on the left side.

One cannot very well imagine the purpose served by this notch to be peculiar to paleolithic and neolithic times. Close examination often reveals, within the hollow, signs of pressing and bruising, resembling the usage marks which will be seen through a lens on a modern chisel or pruning knife.

If, next, we try the experiment of using the notched flake, as we should a chisel or pruning knife, we become aware that the part held by the hand is well adapted to the purpose. If we attempt to use in the same way the notched flints which may be occasionally picked up in cart tracks and on the sea shore, we become aware of a difference in this respect.

The cause is not far to seek. On the former all projections which would have injured the hand have been carefully removed. The result is an "easy fit."

8. It is scarcely credible that we are not here faced with further evidence of design. And, since the need of adapting flint to the hand undoubtedly preceded the need of the flaking process, it would be but straining an argument to suppose that pre-paleolithic flints carrying both notches and "easy fits" are less likely to be human than natural.

9. Some paleolithic tools of *coup-de-poing* type are flattened on one face, convex on the other. They vary in size. I have two tiny specimens from early paleolithic deposits—one of them from Swanscombe. Mr. Cross, who has ransacked Swanscombe and Northfleet pretty well, has a number of different sizes. Roughly worked flints somewhat similar in shape can sometimes be seen in other gravel pits among the poor stuff the diggers cannot dispose of in the museum market.

10. The paleolithic *coup-de-poing* furnishes another opportunity of tracing design in the Pre-paleolithic age.

Among the delicately worked examples of the Acheuleen period there is a class which consists of flints tapered sometimes to a point, sometimes to a knife-end edge. Along with these there is occasionally to be met another type of implement, poignard in shape. An excellent example of this latter can be seen in the Museum at Brussels. It is very cleverly chipped all over, and whether the maker intended it to be used as such or not, undoubtedly it would have served as a convincing argument in time of quarrel.

In the Chelleen period we get similar implements, but of a rudimentary pattern, often simply a flint, which is easy to clutch at one end, and at the other is chipped to a point or knife edge by a few blows skilfully delivered, and making almost equal angles with the long axis.

In very early paleolithic deposits the standard *coup-de-poing* becomes rare in proportion to the total number of worked flints. On the other hand flints suggestive of the dagger type become more numerous; and these are usually long flints easy to hold at one end, and chipped at the other as if they had been struck

repeatedly against some unyielding substance. For convenience in reference we can call them all percuteurs—the name by which some of them are known.

It would seem that the use of these flint percuteurs declined as the skill of paleolithic man progressed. Maybe the quartzite pebble took their place. But this is only conjecture, begotten of chipped fingers through using flint and quartzite pebbles indiscriminately, in gravel pits. The fact remains; these long flints chipped and tapered at the end opposite the clutch are very common in the earliest paleolithic deposits, and are there accepted by all as a type of human implement.

Flints of exactly the same type are also very common in eolithic gravels. The chipping is comparable. Hence it is scarcely credible that in the one case they are the result of human work, and in the other the product of fortuitous river action.

Side by side with these percuteurs and rude *coups-de-poing* of early paleolithic deposits we have a third type of tool, formed of a handful-sized flint worked to a point by a double notch. If, in an effort at classification, we endeavour to arrange specimens from these deposits under the heads of *coup-de-poing*, *percuteur*, and “double notch,” we soon become aware that it is often impossible to draw lines of distinction. Often the three types blend into one, on one tool.

Here, again, we have a state of things paralleled in eolithic deposits. And again, it is scarcely credible that in the one case they are the result of human work and in the other the product of fortuitous pressure and blows. Reject these flints from the eolithic as nature’s work and not man’s, and we must at the same time, I think, reject a good deal from our collections that is labelled paleolithic. We cannot reject them without explaining why, as the skill of man progressed, the shocks of nature were of less avail; nor without explaining why nature, so lavish with her chipping, at one end of a flint should be so sparing at the other. Nor can we reject them without refusing to see in the mind of the child the line of mental development pursued by the race, and at the same time assuming that Mortillet’s paleolithic peoples had a source of knowledge outside the domain of evolution.

11. So far we have been concerning ourselves with the eoliths of European origin. It should not be overlooked that we have also to take account of eolithic deposits in other parts of the world. I will quote a passage from *Stone Implements of South Africa*, by J. P. Johnson, p. 2 (Leitfontein):—

“This gravel consists mainly of subangular fragments of jasper—a material that has travelled a long way, the nearest source being the Asbestos Hills, some 30 miles west. While it apparently can only have been brought to its present position by water, it has no evident connection with any existing river, and is therefore probably of very great antiquity. The jasper has changed externally from its original dull brown colour to a yellowish brown, and acquired a high glaze and polish.

“Mixed with the gravel are quantities of much worn and highly glazed eoliths. A few of these are a little more advanced than the true eoliths, being made from

artificially produced splinters, but they are a small minority. Otherwise the group is in every way identical with the typical assemblage met with in the early plateau drifts of Southern Britain."

On referring to Mr. Johnson's plates it will be found that in general appearance the eoliths tally with the eoliths with which we are here concerned. The notch—both single and double—is very pronounced.

12. The same remark applies equally well to the implements used till quite recently by the aborigines of Tasmania, and here, as may be seen by the specimens exhibited in London, Cambridge, and Brussels, the material is far from being of a flinty nature.

13. To sum up the matter, I take these Dewlish eoliths to be of human origin.

I fail to find upon them any suggestion of origin by stream action—there is no fortuitous pounding of the surfaces, or abrasion of the edges. The eolithic fractures exhibit no signs of that irregular splitting and crushing which characterises the products of fortuitous shocks, and of the squeezing of flint against flint in a steadily sinking mass. The difference between the eolithic chipping and that on the general run of the flints from the same deposit is marked. And since we may take it that the eoliths have been subjected to the same kind of natural pressure, within the deposit, as the rest of the flints, I consider this difference to be highly suggestive of non-natural action. The difference became very apparent after I had handled some hundreds of the flints on the spot. More so, after examining at home a weighty number which Mr. Kent had kindly collected and forwarded. It was further emphasised by an inspection of some chance fractures which had been caused by the opening up of the scarp pit.

In brief, the eolithic chipping can, I submit, be differentiated from fortuitous natural chipping.

On the other hand, when I look at the result of the chipping I find some of the eoliths bear a resemblance in size, in shape, and in details, to paleolithic *pièces* which would to-day be generally accepted as human implements. Human implements, because the frequent repetition of these points of resemblance is generally accepted as good evidence of adaptation to a purpose; good evidence of human design and human origin.

I find others clearly belong to well-known types found in the gravels of Alderbury and Laverstock, in the plateau drifts of the North and South Downs and Hackpen Hill, and also in South Africa and Tasmania. Granted, it is quite possible for the shocks of nature to produce points of resemblance on fragments of stone in these places; that interpretation of the origin of these types is not, I think, possible, seeing that they present a remarkable combination of features repeated again and again, on stones differing in texture, from deposits which differ in character, and are far apart.

No. 1 from the field.—A flake with beak-shaped notch in left top corner. It has lost much of the original stain on the smooth side; all of it along the edge, where it is quite white.

No. 2 from the field.—A pebble-shaped flint; notched. The fractures show wave markings. Stain faded.

No. 3 from the field.—Double notched, and with a well-formed point. One notch made by blows struck in opposite directions. Back fits the hand well, except at one corner, where is a natural fracture of later date. A common Alderbury and Kentish type.

No. 4 from the pit.—Double notched; the left notch with a row of small parallel chippings. (4*a* was found the following day at the base of a pit in the gravels of the Frome Valley, near Moreton Station.)

No. 5 from the pit.—Notched. In section not unlike a flat-bottomed paleolith. Trimming along the edge. When clutched in the right hand the notch shows itself at the left top corner.

No. 6 from the pit.—It will be observed that pieces have been shaved off the back to give a better grip. At one end there are two notches with point between them. This feature can be matched on Tasmanian implements, also on early paleoliths. Mr. Snares, of Brandon, was able to match the "shaved" flakes from the waste in his workshop.¹

No. 7 from the pit.—Percuteur type. A somewhat cylindrical flint, tapered at one end as if by knocking downwards against an unyielding substance. It fits the hand and the size is convenient for use. A glance at the different surfaces is sufficient to dispel any supposition of stream action.

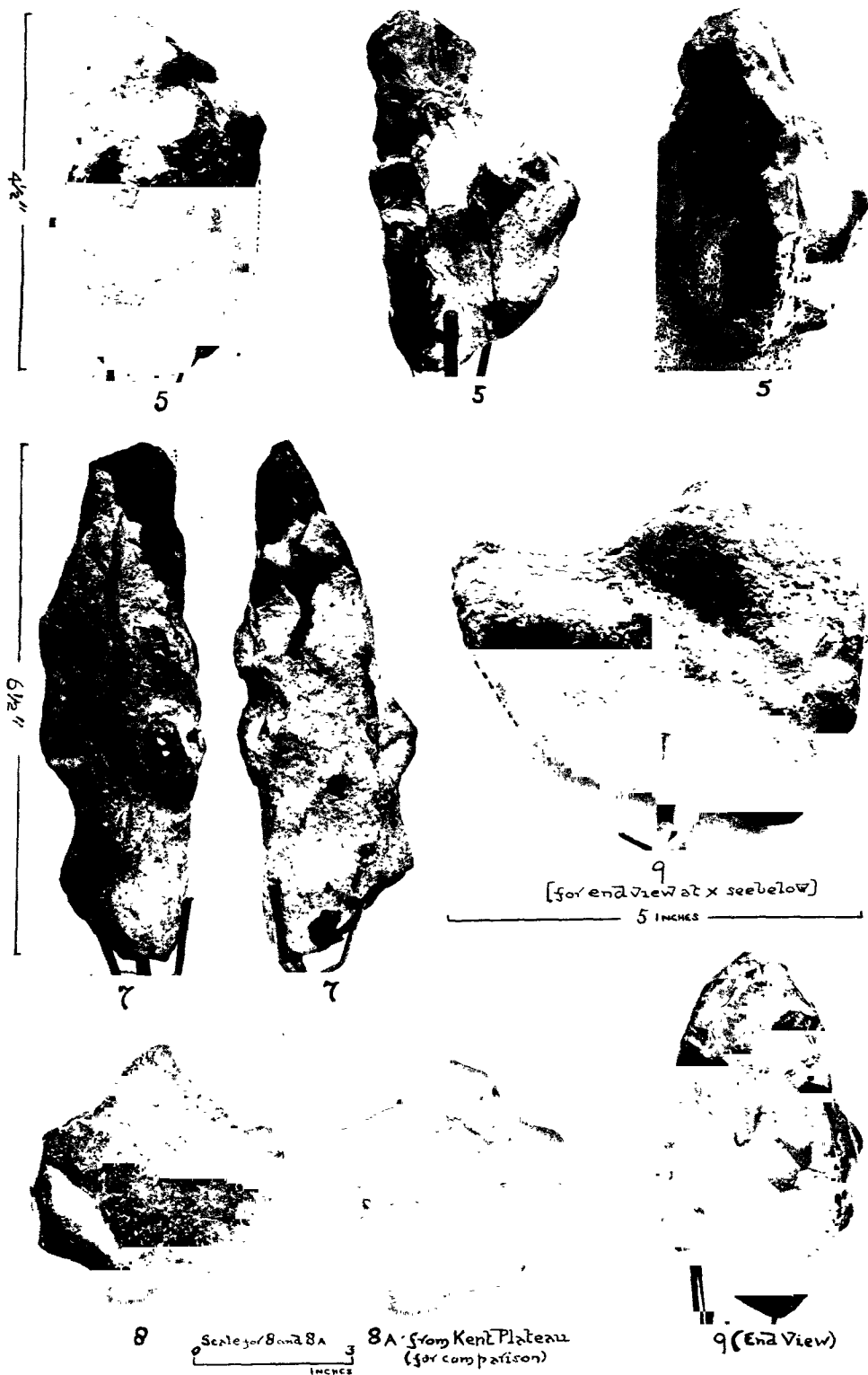
No. 8 from the pit.—(8*a* and 8*b* are from Kent.) Dr. Blackmore has found similar shapes at Laverstock. M. A. Rutot finds the form common in all eolithic industries, including S. Prest. It is a form also found in early paleolithic deposits. I have a *neolith* much like it. Mr. Johnson figures similar implements in his *Stone Implements of South Africa*.

No. 9 from the pit.—Apparently a hammer stone. Broad end worked to a slightly convex shape, by numerous fractures recalling paleolithic work.

No. 10 from the pit.—A rough flake of flint chipped at the edges; common Kentish type. Very like some Tasmanian tools.

No. 11 from the field.—The chipping along the back is too evenly distributed to be ascribed to fortuitous pressure or blows.

¹ Mr. Snares, the flint worker at Brandon, is of opinion the Dewlish eoliths are of human origin.



SOME EOLITHS FROM DEWLISH.



SOME EOLITHS FROM DEWLISH.

A NEOLITHIC SITE IN THE ANGLO-EGYPTIAN SUDAN.

BY C. G. SELIGMANN, M.D.

[WITH PLATES XXII-XXV.]

THE country between the White and Blue Niles to the south of Khartum is generally speaking flat and covered with coarse grass and thorny *kitr* bush. In the wet season this constitutes a vast plain of mud covered with vegetation; in the dry season water is scarce, water-holes are far apart, and south of Goz Abu Gunna are hardly to be found, except at the foot or on the flanks of sparsely vegetated isolated masses of rock which, here and there, project from the level surface of the plain. Many of these *jibal* are of considerable size, and whenever there is water on or near them they support settlements which, as my informants assured me, were of considerable importance as far back as the days of the old kingdom of Senaar.

Jebel Gule, at the base of which were found the worked stones which I describe below, is a typical example of these hills. Fig. 1 of Plate XXII, for the use of which I am indebted to Mr. Lincoln Tangye, indicates how this *jebel* rises from the plain to form the only prominent landmark for many miles. It lies some 300 miles south of Khartum, and 50 miles east of Renk on the White Nile; it is over 1,000 feet high, and probably has a circumference of about five miles. In the days of the kingdom of Senaar it was the capital of a province, but all that remains now of its former greatness are two small settlements of people who call themselves Fung, and appear to be generally known as Hameg. The character of the larger of these settlements becomes obvious on examining Fig. 2 of Plate XXII, which also shows a small waterless *jebel* on the horizon. There are a number of Arabs in both settlements, but though the Hameg (of this hill) all speak Arabic and profess Islam, many of them also speak their old language, and they still keep up a number of customs which they admit have come to them from their pagan ancestors.

One water-hole at the base of Jebel Gule, though small (Plate XXII, Fig. 3), was said never to have run dry, and must be considered to have been the chief support of the people living here during the dry season, since neolithic times.

The traces of neolithic man found at Jebel Gule are of two kinds:—

(i) Implements.

(ii) Grooves in the rock due to the grinding of stone implements.

The implements are of three classes, and show that three industries have been carried on at Jebel Gule, though, as all three classes of implements have been

found on the surface of the soil, often in the very middle of the village, there is nothing to show their relative ages.

The three classes of implements are :—

- (i) Pygmies.
- (ii) Worked, but unpolished stones.
- (iii) Polished stones.

The majority of the implements are of hornstone, clear or milky quartz, or carnelian, but a few consist of a breccia cemented with chalcedony.

Of polished stones I have seen only one specimen, the basalt axe- or adze-head, shown in Fig. 4 of Plate XXII. I did not find this myself; the local blacksmith from whom I obtained it said he had picked it up upon the hill. As far as could be ascertained by inspection, basalt does not occur on the *jebel*, but flat water-worn pebbles of the same rock have long been used as grindstones, and the hammer-stone shown in Plate XXII, Fig. 5, is part of a water-worn basalt pebble.

The grooves in the rocks in which, no doubt, implements of the type shown in Fig. 4 of Plate XXII were ground, are so well shown in Plate XXIII that no description is necessary. They are generally 30–40 cm. long, by about 12 cm. broad. How well they fit the only polished stone implement discovered, is shown by Fig. 2 of Plate XXIII, which represents this implement resting in one of the grooves.

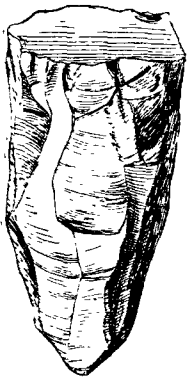
Three groups of these grooves were noticed, and doubtless others exist on the hill.¹



FIG. 1.—PYGMY IMPLEMENTS $\frac{2}{1}$, *f* AND *g* HORNSTONE, THE REMAINDER QUARTZ OR CARNELIAN.

¹ In connection with these grooves I may refer to certain markings on the rocks of some of the *jibal* of Southern Kordofani other than pot-holes (ascribed to Allah, "*Rubbinu sakit*," said

The pygmy implements, though by no means scarce, are not nearly so abundant as the unworked unpolished stones. For the greater part they consist of worked pieces of clear, opalescent or opaque quartz and carnelian, from 1 to 2·5 cm. across, and often nearly as long as they are broad. The majority of these specimens are not perfect, but that they were never greatly larger than they are at present seems to be shown by the perfect specimens, the best of which are shown on page 210. Several of these (Fig. 1, *a, b*) still show part of the rough and pigmented external layer of the quartz pebble from which they were fashioned, and this is by no means an uncommon feature in these specimens. Fig. 1, *c, d* represent two minute but very beautifully worked carnelian implements, the only two of this type that were discovered. A considerable number of pygmy flakes of hornstone (1*f*, 1*g*) and one very fine pygmy core were found, but very few perfect implements. The core which is shown in Fig. 2 is 23 mm. long; its base, which is roughly circular, being 10 to 12 mm. across.

FIG. 2.—PYGMY CORE OF HORNSTONE $\frac{7}{8}$.FIG. 3.—HORNSTONE BLADE $\frac{7}{8}$.

Apart from pygmies, the worked but unpolished implements present a great variety of form, and vary much in size, though no very large specimens were seen.

The best characterised forms were the following:—

Discs.—Discs of flint, with one flat and one convex face, resembling the palæolithic discs from Suffolk and other localities (Plate XXIII, Fig. 3, *a, b*). The lower portion of the flat surface of one of these (shown in Plate XXIII, Fig. 3, *a*) is much worn, and appears to have been re-touched a number of times, so as to produce a

my informants) and old millet-grinding stones. On Jebel Korindi I was shown marks on the rocks—attributed to the slipping of the feet of a cow of heavenly origin—and I heard of other marks, alleged to be similar, on Jebel Eliri. Although some of the marks on Jebel Korindi are clearly natural, others which do not resemble closely the grooves in the rocks of Gebel Gule may have been caused by the grinding together of two surfaces. It is true that no worked stones were found in Southern Kordofan, but my work there lay among the Nuba villages on the *jibal*, around which the grass was so high at the time of my visit that the chance of finding any stone implement was reduced to a minimum. Further, I should expect to find implements rather in the neighbourhood of the bastard Arab settlements at the foot of the hills than upon the hills themselves.

slightly concave edge of the type that resembles the cutting edge of a boar's tusk, which makes an excellent spokeshave.

Blades.—Elongated implements with parallel edges and one or two ridges running the length of the stone (Fig. 3, p. 211).

Scrapers.—Flakes with one or both edges worked. A considerable number of these of different shapes and sizes were found. The sharply toothed edge of one of these suggests that it may have been used as a saw. Many of these implements—including all those shown in Fig. 4—were made of quartz, a number of hornstone scrapers are illustrated in Plate XXIV.

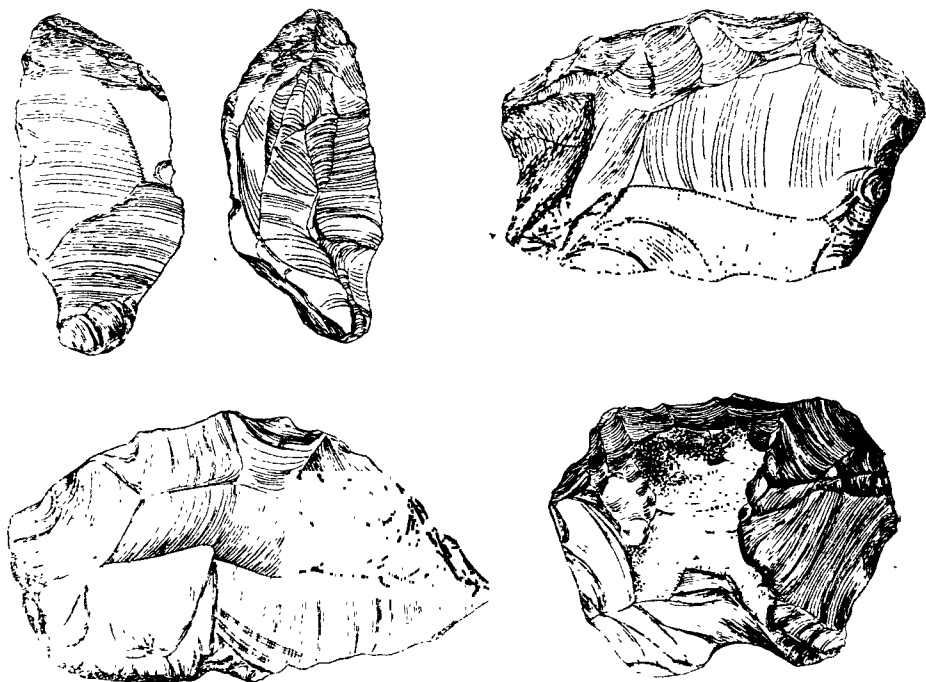


FIG. 4.—QUARTZ SCRAPERS $\frac{2}{3}$.

Besides these, many unworked flakes and a number of cores were collected. Among the former are many which, although they can scarcely be called pygmy, are considerably smaller than the majority of flakes found on this site.

My collection includes a single example resembling a small palæolithic *coup-de-poing*, with a cutting edge all round and a flattened butt; this is shown in Plate XXIV, Figs. *f* and *f*¹. Only one boring instrument was found—a large flake, with one edge roughly worked on both sides, had been brought to rather a clumsy point (Plate XXIV, Fig. *g*). One face of this specimen presented a somewhat darkened and polished surface, which I assume to be due to the effects of exposure. A considerable number of irregularly shaped fragments of hornstone were found on this site, two of which are shown in Plate XXIV, Figs. *h* and *k*. It is obvious that they have been worked, but they do not appear to be cores, and I am unable to suggest their purpose.

Finally, mention must be made of a number of fragments of carnelian beads found among the collections of worked and unworked stones brought to me by the women and children of Jebel Gule. The beads from which the fragments were derived were comparatively long, the outer surface was roughly ground and only approximately circular; indeed some of the fragments show that the beads were polyhedral in section rather than circular. Probably these beads were from 3 to 5 cm. long, and tapered slightly towards each end; indeed they must have resembled very closely certain carnelian beads, said to be old, which are commonly worn by the women of Omdurman. There is nothing to indicate the age of the fragments from Jebel Gule; the *sheikh* of the settlement said that beads such as they were derived from, were not rare a couple of generations ago, and added that they were brought to the *jebel* by pilgrims returning from Mecca. He did not know where they were made, but was confident that they came from the East. As inquiries made elsewhere had resulted in Abyssinia being given as the place of origin of the similar beads worn at Omdurman, it seems reasonable to conclude that the fragments of beads found at Jebel Gule are derived from beads imported from the East during the historical period.

I have described these implements and the site upon which they were found at some length, because they appear to be the first stone implements found in the Southern Sudan unassociated with the remains of an historic civilization. They were all gathered at the foot of the *jebel*, on the present village site, or in its immediate vicinity. The ground here, apart from the village débris which enters into its composition, consists of fine sand which is blown about by the strong winds, which during my stay blew almost every night. The implements were all found on the surface of the soil, or buried under a layer of sand so thin that it might be laid down or removed by every storm. It is therefore obvious that the position in which these stones were found cannot determine their age or the relative age of the three industries of which specimens have been described. Under these circumstances I have been guided by the absence of darkening or of considerable sand polishing, in referring to a comparatively recent period those specimens which present forms commonly regarded as palæolithic.

It remains only to thank Mr. Reginald Smith for his kindness in examining and discussing with me a considerable number of the specimens which I brought home from Jebel Gule, and Mr. L. J. Spencer for identifying the rocks of which they are composed.

Addendum.—As the stone implements described in this note are the first of their respective forms found in the Southern Sudan, it may be useful to record that Mr. H. A. MacMichael has sent to the Gordon College, Khartum, a number of cylindrical stone club- or mace-heads, some of which have been very beautifully made out of hard igneous rock.¹ He obtained these by digging in Northern

¹ Stone-headed clubs are still in use among the Nubas of Southern Kordofan, where I saw many specimens and ascertained that they were made on Jebel Korongo, where their manufacture is still carried on. The club-heads are spherical in shape, and thus differ from all the specimens referred to in this paper.

Kordofan, where they are quite unknown at the present day. Messrs. Grabham and Bird have obtained, from the neighbourhood of Jebel Geili, 90 miles due east of Khartum, a number of roughly worked stone implements, including portions of stone discs or club-heads. They also discovered stone implements at one or two other places, *e.g.*, Jebel Sabaat, to the east of Jebel Geili. These specimens, which appear to be associated with a comparatively advanced type of civilization, are now in the Museum at the Gordon College, and my thanks are due to the Director, Mr. J. Currie, for allowing me to reproduce the photographs of some of these specimens which are shown in Plate XXV. It is obvious that these differ entirely from the specimens found at Jebel Gule,¹ but the adze-heads, which are of a hornblende schist, closely resemble in finish, and indeed appear to be of the same stone as a small blade found by Professor Garstang at Meröe, and exhibited at Burlington House. Further, certain of the "hollow stone objects of purpose unknown, chiefly from the Necropolis," at Meröe, closely resemble the best of Mr. MacMichael's club- or mace-heads.

¹ Jebel Geili has been explored by Mr. J. W. Crowfoot; like Jebel Gule it has a constant water supply and is the site of a settlement. Here is a rock with carving dating from Ethiopian times, and near it "in an open space near some disused wells" were "clear traces of walls of burnt brick. And lying about were fragments of the fine chalky pottery which I had previously found on all the old Ethiopian sites, and fragments of stone rings. . . ." The quotations are from Mr. Crowfoot's unpublished notes, and I take this opportunity of thanking him for allowing me to make use of these. I may here note Mr. Crowfoot's opinion that these specimens—he writes especially of the mace-heads—date from about A.D. 150 to A.D. 350.



FIG. 1.—COUNTRY BETWEEN RENK AND ROSEIRES ; JEBEL GULE IN THE DISTANCE.



FIG. 3.—WATER HOLE AT JEBEL GULE.

A NEOLITHIC SITE IN THE ANGLO-EGYPTIAN SUDAN.



FIG. 2.—HAMEG SETTLEMENT AT FOOT OF JEBEL GULE.

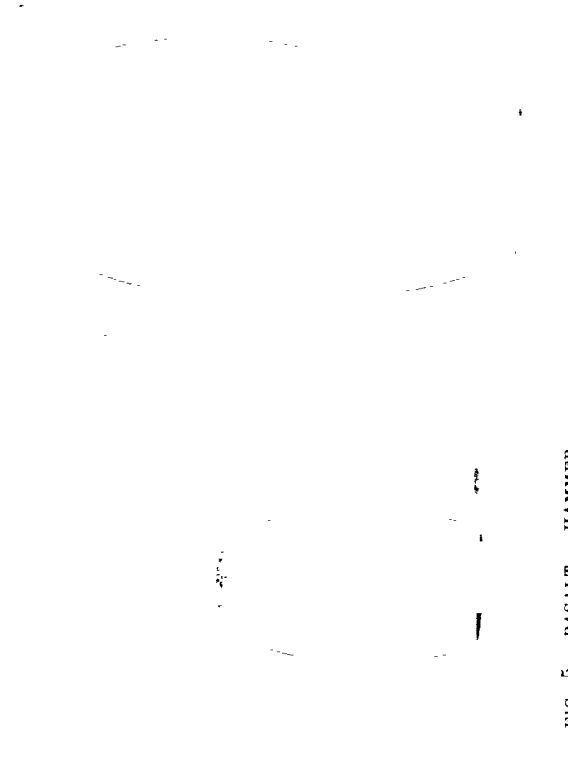


FIG. 5.—BASALT HAMMER-
STONE FROM JEBEL
GULE. $\frac{1}{3}$.

FIG. 4.—BASALT ADZE HEAD FROM
JEBEL GULE. $\frac{1}{3}$.



FIG. 2.—JEBEL GULE; GROOVE IN ROCK, WITH NEOLITH RESTING IN IT.



FIG. 1.—JEBEL GULE; GROOVES USED FOR GRINDING NEOLITHS.



b



d



a

FIG. 3.—HORNSTONE DISCS FROM JEBEL GULE.

A NEOLITHIC SITE IN THE ANGLO-EGYPTIAN SUDAN.



a



b



c



d



e



f



f'



g



h



k

WORKED STONES FROM JEBEL GULE.

A NEOLITHIC SITE IN THE ANGLO-EGYPTIAN SUDAN.

THE KABÁBÍSH. SOME REMARKS ON THE ETHNOLOGY OF A SUDAN ARAB TRIBE.¹

BY H. A. MACMICHAEL.

THE word tribe as commonly used generally implies among other things a closely homogeneous collection of families or individuals living together under a hereditary or elective sheikhship, and largely distinct by race from other such communities.

One object of this paper is to try to demonstrate by a single example to what extent the above partial definition is likely to be justified as applied to the Arabs of the Sudan.

Now in the first place the Arab living under a patrilinear system pays almost exclusive attention to the male side of his ancestry, and by reason of his religion lays peculiar stress upon such elements in his blood as he believes to originate in the country of (and date approximately from the time of) Muhammad.

Were one discussing the racial identity of the child of a naturalized Englishman who was the son of an Italian father and a Spanish mother, and who had married a Portuguese wife, it would be unwise to dogmatize overmuch as to the child's nationality academically considered, but the Arabs of Kordofán, whose antecedents are of an equally chequered order (though said to be as purely Arab as any others in the Sudan), are entirely unabashed in glibly arrogating to themselves pedigrees which, if correct, would not only mark them as a race unrivalled in the history of the world for nobility and purity of descent, but suggest secondarily the question, "Of the millions descended from Shem have none found their way to this great tract of country except relations and close companions of the Prophet himself?"

Previous accounts of the Kabábísh, though more complete than that which follows in regard to general descriptions of the tribe at the time of writing, have almost entirely neglected that aspect of the tribe upon which it is the object of this paper to throw some further light.

The longest account of them that I have seen is that read before the Royal Geographical Society by Mr. Mansfield Parkyns on June 10th, 1850; but the author mainly confined himself to the description of the habits and customs of the tribe, without concerning himself greatly with their ethnical composition and antecedents.

A second view of the Kabábísh (including a theory as to their origin) was presented in August, 1887, by Sir C. W. Wilson in his paper read to the Anthropological Institute.

¹ By the Sudan in this paper is meant only those more easterly countries now included in the Anglo-Egyptian Sudan. Any connection between the Kabábísh and tribes now or previously residing farther west is so slight as to be negligible.

I am not aware of any other detailed mention of the Kabábish, but, of course, the majority of travellers in the Sudan could hardly avoid some passing mention of a tribe that has long occupied so large a portion of the country.

The most obvious way of beginning any enquiry with a view to determining the origin of the various families composing any tribe, is to find out from its members the name of every section and subsection of the tribe, and then to enquire from members of other tribes the reasons for the distinctive names borne by each. By inference—a frequently misleading way is to enquire directly into the origins of the tribe from its own sheikhs. The reason for this is obvious: it is to the interest of the sheikhs to lay stress upon the unity of their tribe, and, consequently, they are loth to confess that their tribe was, in the first instance, formed by a coalition of different races (assuming such to have been the case) or to admit that it has since been joined by many more foreign elements. Rather with specious candour they will answer one's questions by saying that their tribe traces its descent to one of the relations or, at least, companions of the Prophet.

Among the more settled tribes any important sheikh or faki can produce a table of his ancestors (*i.e.*, a *nisba*) in support of his asseverations, and will generally add that the main divisions of the tribe are considered separate by virtue of the fact that the original "father" of the tribe had a certain number of wives, and his descendants by each have formed separate sections, and that this process has been continued down to the present day, but that "God knows best."

A lurid light was thrown on this matter for my benefit on one occasion. I asked a village sheikh if he could show me his pedigree, as I did not know from which of the exalted sources his particular tribe claimed descent. He replied that he did not know yet, but that his village had subscribed 60 piastres the month before to hire a faki to compose a *nisba* for them, and that he would show me the result when it was finished.

At present there are not many of these *nisbas* to be found in Kordofán with any rightful pretensions to be more than a haphazard stringing together of names culminating in a relation or companion of the Prophet, and one has, therefore, one clue the less to follow. The reason for this scarcity is apparently that the Khalifa 'Abdulláhi, fearing that a consciousness of high descent, corroborated by the written evidence of an old document, might cause the possessor to be overproud, and even boast that his descent was better than that of the "Ta'áishí 'Abdulláhi," caused all the heads of tribes over whom he had the requisite power to produce the *nisbas* that had descended to them from their fathers' hands, and then destroyed these *nisbas* by fire.

I have only read two *nisbas* of any antiquity or worthy of any respect, and each belonged to the head of one of the religious "Taríkas" of Kordofán, whose family it had probably been found inadvisable to molest. The nomad Arabs, among whom, of course, are the Kabábish, do not seem to possess any *nisbas* at all; at any rate I have never yet either seen or heard of one in their possession.

In order to clear the way for further discussion an attempt must now be

made to give some rough account of the circumstances that must have accompanied the growth of any Arab tribe in the Sudan.

The Arabs being the latest immigrants to the northern half of Africa to affect seriously the racial composition of the tribes of the Sudan, any one of the present day Arab tribes may be said to consist of a blend between the Arabs who entered Egypt in A.D. 640, or later, and the peoples whom they found already in the Sudan. It will therefore be as well to begin by making hurried mention of these latter, and endeavouring to show in what way and to what degree each of them was destined to modify the Arab blood of its conquerors.

First and foremost are the negro races, neither Semitic nor Hamitic in descent. These formed the substratum of most of the races found by the Arabs in the Sudan. Their remotest origin is still doubtful, and it is not known for certain whether they were aboriginal Africans or whether their remote ancestors came from the East over the Straits of Báb el Mandeb. But from the earliest times known until the present they have most profoundly modified every other race that has come to the northern half of the continent. Once they ruled great kingdoms, but now, for many years, their descendants have been little else but "hewers of wood and drawers of water" for the more enterprising and virile races that, ever pushing southwards, have absorbed them, or else practically eliminated them from the greater part of Northern Africa. Yet, even still, a very great number of the present Sudan "Arabs" are the sons of a negress.

A second people with whom the ancestors of many of the Sudan Arabs largely mixed were the Copts. This people, no doubt, originally traced their descent from those old dynasties of Egyptians that ruled the land for thousands of years. The earliest of these dynasties, possibly of negro origin, were displaced by foreigners from the East. An example of such were the Hyksos, who, coming either from Syria or Arabia, perhaps about 1740 B.C., overran Egypt and the Eastern Mediterranean seaboard. Later, the conquered people rose and ousted them, swept in their turn over Syria, and were themselves, finally, driven back again. Thus the tide of war rolled backwards and forwards east and west over Syria and Egypt for centuries. In contrast to the negroes, the men of these dynasties would be mostly of Caucasian stock, and some of them (*e.g.*, the famous "automoloi" in the reign of Psammetichus I. of the XXVIth dynasty) settled in the Sudan among the black tribes.

But one has only to glance at the records, such as exist, of the dynastic changes that passed over Egypt, from the earliest until the latest times, to see that the Copts who inhabited Egypt in A.D. 640 must have been essentially a mixed population with elements drawn from nearly every part of the Mediterranean seaboard, and to some extent already cognate to the Arabs by virtue of the partly Syrian origin of each.

Allied by race to both the above groups are the mixed race represented to-day by the Galla, Somáli, etc. These people, who are supposed to be ultimately descended from a mixture of Caucasian, negro, (and perhaps Dravidian,) elements,

have filtered across the Red Sea from Arabia (and, being largely Hamitic, are cognate to the Libyans). They formed a mainstay of ancient Egypt against the otherwise predominant negro blood. With these again the Arabs have a double connection; firstly, in so far as both have a common Caucasian origin in remote prehistoric days; and, secondly, in the fact that the Arabs have, since the conquest of Egypt, intermarried with the Somáli, Galla, etc., between the Nile and the Red Sea.

Related again to the last-mentioned group are the people whom Herodotus distinguished as Eastern Ethiopians, and who were nomads of reddish skin dwelling not only in the eastern desert, where their descendants still live, but across the whole of the southern frontier of Egypt on either side of the Nile. They are the Blemmyes of the classical writers, and almost certainly the Bija of mediæval and modern times. They mixed very largely with the negro Nobatae (presumably the same as Nuba), who dwelt in Northern Kordofán, and from the beginning of the third century A.D. till the time of Diocletian harried Egypt.

We know that in A.D. 869 many Arab tribes, but chiefly Rabí'a and Guhayna—(we shall meet the latter again)—invaded the Bija country and settled among them and intermarried with them, and within a century even supplied their clans with sheikhs (*e.g.*, the case of the 'Ababda). It is noticeable that Burckhardt relates that they claimed descent from the Beni Helál (of whom more later).

Again, there are the Berbers, colinguists of (but developing apart from) these Hamitic peoples. They for some centuries at least before Christ inhabited Northern and part of Eastern Africa, and had been instrumental in compelling the black races of the north to retreat southwards.

After the conquest of Egypt they long opposed the oncoming hordes of Arabs with varying success; but gradually they were either themselves forced farther south, or preferred amalgamation with the Arabs. The latter was the more common result, and Muhammadanism not only gained many devoted and bigoted adherents from their ranks, but received most timely assistance from them in conquering Spain. The Berbers probably mixed their blood with that of the Arabs, after the conquest, to a greater extent than did any other African peoples.

Finally, immediately before the conquest of Egypt by the Arabs, the Persians had seized the whole country from the Roman Governor, and penetrated in A.D. 618 to Syene. In 627, under pressure from Heraclius, who attacked them nearer home, they evacuated the lands they had won; but it is more than probable that a certain number of them remained on the banks of the Nile, and that others returned in the contingents that followed 'Amr ibn el 'Ásí and his successors. In this connection too it may be noted that there are a considerable number of people at present settled in Kordofán calling themselves Baghdádis, and saying that they crossed into Egypt during the Khalifate.

To come now to the Arabs, whom, for the present, we will consider a homogeneous race. Of course, the vast majority of them, not counting those early Arabian elements mentioned above as having entered Africa before the dawn of

history, came to Egypt and the Sudan after the rise of Islam; but there is also abundant proof that colonies of them had immigrated in the centuries immediately preceding Islam. Thus, by the second century A.D. we know that the Arabs had planted trading colonies on the east coast of Africa, and there is evidence that long before this they had crossed the Red Sea and gained a firm foothold. An adventurous people would not have been content to leave the rich interior unexplored, and it is sure that, though they may not have settled to any great extent save on the coasts, they traded largely with the interior. In Kanem the chroniclers relate that the first king to reign, in pre-Islamic days, was a Himyarite, and though this be discredited, there is no doubt that the Arabs had certainly reached Wadai before the time of the Prophet, and one would be justified in assuming that for every Arab so far west there would be a score or more in the no less rich lands nearer the coast.

But even earlier than this there is the evidence of inscriptions that during the hegemony of Ma'in and Saba in Yemen (c. 1500-300 B.C.) there was considerable intercourse between the ports of Western Arabia and the Thebaid by way of Kosseir (Leukos Limen), and it was during these years that Abyssinia received its Semitic population. According to Ibn Raḳīḳ, followed with limitations by el Bakrī and Ibn Khaldūn, several of the great Berber tribes who occupied North Africa at the rise of Islam were by origin Himyarite, and thus the process of coalition between Arab and Berber in the seventh century A.D. would seem to have had its counterpart long previously. In favour of this theory is the fact noticed by Ibn Baṭūṭa of the great resemblance between the inhabitants of Zhafār in South Arabia and the Sanhāga Berbers of North Africa.

In A.D. 640 'Amr ibn el 'Āsī conquered Egypt. Soon afterwards 20,000 Arabs invaded Nubia, and finally subjected it in 652. The stream of emigration from Arabia still continued throughout the seventh and eighth centuries, and in the ninth century the Aulād Kanz transferred themselves bodily to the Ṣa'id, and (as we have seen) the tribes of Rab'ia (of whom the Aulād Kanz were but a section) and Guhayna invaded the Bija country about the same time.

Mr. Lane Poole holds that by about A.D. 970 these Arabs had sufficiently amalgamated with the Copts whom they found in Egypt to form roughly the same race as that which we now call Egyptian: a great number had rapidly discarded their desert mode of life and become sedentary; but probably the majority remained nomad, and would, therefore, not mix to the same extent with the natives of the country. It was these nomads that from the time of the 'Abbāsīd Khalīfs of Baghdād onwards till that of the Mamlūks were a continual source of trouble to their nominal rulers, so that expedition after expedition had to be sent to repress them.

In 1275 the Sudan was annexed by the Arabs, who henceforth probably penetrated in increasing numbers the kingdoms that stretched across the breadth of tropical Africa. For example, it was probably about the beginning or middle of the fourteenth century (though Dr. Nachtigal thought later) that the still pagan Tungur

first swept over Dárfúr from the north; and by the end of the fifteenth century Arabs and Fung had coalesced into a single race to the west of Abyssinia and were pushing westwards.

Mas'údí (c. 943 A.D.) mentions a colony of Kaḥṭánites transplanted to Assúan from the Hegáz, and it is said that the Gawábra, from Nejed and Irák, from early in the fourteenth century till 1520 occupied the land between the first and second cataracts, and then were driven by Selím's Bosnians to Dongola, where they again settled and intermarried. Nor must it be forgotten that there has been Arab immigration of varying volume into the Sudan by way of the Red Sea at every period for the last 2,000 years at least. But an account of this steady influx of Arabs into the Sudan would lend itself to an indefinite elaboration.

The main factors that affected the ethnical development of the Arabs in the Sudan having now been noted, however imperfectly, in chronological order, we may now turn to the particular case of the Kabábísh, with a view to determining the extent to which their history is illustrative of the process of gradual amalgamation outlined above.

The following is a list of the sections and subsections of the Kabábísh who are in Kordofán: a certain number of unimportant names of families are omitted, but those given will suffice for the purpose of this paper.

- | | | | |
|--|-------------------------|---|--|
| A. | | F. | |
| <i>El Núráb.</i> | | <i>Aulád' Uḡba.</i> | |
| 1. el Howáráb. | 8. Dár Sa'id. | 1. el Dariáb. | |
| 2. Aulád Tarayfi. | 9. Aulád 'Ōn. | 2. Dár 'Alí. | |
| 3. Kibbaysháb. | 10. el Ribaykát. | 3. el Sa'adía. | |
| 4. Aulád Howál. | 11. Dár Kabír. | 4. el Shilaywáb. | |
| 5. Aulád Núái. | 12. Dár Um Bakhít. | 5. el Ḥamdáb. | |
| 6. Ghilián. | 13. Aulád el Kír. | | |
| 7. Towál. | 14. el Neḡáda. | | |
| B. | | G. | |
| <i>el 'Awáida.</i> | | <i>el Guḥayma.</i> | |
| <div style="display: inline-block; vertical-align: middle;"> <div style="display: inline-block; vertical-align: middle;">el 'Awáida</div> <div style="display: inline-block; vertical-align: middle;">el Zarruk</div> </div> | 1. Nás Walad Rahma. | <div style="display: inline-block; vertical-align: middle;"> <div style="display: inline-block; vertical-align: middle;">1. el Lahawiín.</div> <div style="display: inline-block; vertical-align: middle;">a. Aulád el Faki.</div> <div style="display: inline-block; vertical-align: middle;">b. Gubaráb.</div> <div style="display: inline-block; vertical-align: middle;">c. Mákit.</div> <div style="display: inline-block; vertical-align: middle;">d. Gawámís.</div> <div style="display: inline-block; vertical-align: middle;">e. Balúláb.</div> </div> | |
| | 2. Nás Walad Maḡbúl. | | |
| | 3. Nás Walad el Heláli. | | |
| | 4. Nás Walad Rábiḥ. | | |
| | 5. Nás Walad el Bashír. | | |
| C. | | H. | |
| <i>el 'Atawía.</i> | | <i>el Berára.</i> | |
| 1. el Fárisáb. | | | |
| 2. el Baḡaráb. | | | |
| 3. Dár 'Alí. | | | |
| 4. Manúfaláb. | | | |
| D. | | | |
| <i>el Serúgáb.</i> | | | |
| 1. Dár Sa'ad. | | | |
| 2. el Ganádba. | | | |
| 3. el Derimía. | | | |
| 4. el Mahaláb. | | | |
| E. | | | |
| <i>el Ruwáhla.</i> | | | |
| 1. Dár Buḡinna. | | | |
| 2. Dár Gamí'a. | | | |

The names bracketed together belong to sections that are either closely allied by race or subject to the section which in each case is placed at the head of the bracket and underlined. It is practically impossible now to draw a hard and fast line between the bonds that have been formed by consanguinity on the one hand and by force of arms on the other, but that there is such a distinction must generally be borne in mind: for instance, in the first group the Núráb, as will be seen, are far more closely related to the Ribaykát than to the Aulád Tarayfi, who are rather their clients than relations, and have joined them for protection (and would fight under their leadership in case of need). The Kabábish in Dongola province are a much smaller community than their namesakes in Kordofán, and only for the last generation have they been under a separate *omda*. So far as I know they do not differ materially from the Kordofán Kabábish. Their chief divisions, I am told, are:—Um Matú, Maraysáb, Gungunáb, 'Awáida, Bayúdáb, Aḥaymeráb, Bilaylát, Dár Bashút, Deládím, Dár Ḥámíd.

Kordofán traditions unanimously point to the Aulád 'Ukba as being the original Kabábish or the foundation upon which the present tribal structure has been built. I will try then to explain first the origin of the Aulád 'Ukba so far as possible.

Investigation has been somewhat obscured by the fact that there were several Aṣḥáb of the name of 'Ukba, *e.g.*, 'Ukba ibn 'Ámir, 'Ukba ibn 'Uthmán, and 'Ukba ibn Waháb; and in consequence it has generally been considered polite to say that the Aulád 'Ukba are descended from one of the above—preferably the first mentioned, who was a Guhani and became Governor of Egypt in A.D. 665. Often they are said to be descended from an "'Ukba ibn Yásir, Governor of Egypt and Ṣāhib of the Prophet"; but in whatever form the story may appear there is little to support it.

Whether their ancestor was Governor of Egypt or not, it is practically certain that the Aulád 'Ukba did reside for some time in North Africa.

All accounts to-day unite in saying that of the Aulád 'Ukba who crossed into Egypt from Arabia a large portion passed through Tripoli and eventually drifted into the ranks of the Felláta in West Africa; this branch of the Aulád 'Ukba are said to be known nowadays as "Nás el Shaykh 'Omar el Fúta" and "Nás el Shaykh 'Uthmán ibn Fódia [the great founder of the Fulbe or Felláta empire in 1803]." Others of the tribe are said to have stayed in Egypt and to be known there as "Aulád 'Alí": while a third portion settled in the Syrian desert near 'Akaba. This, I think, is quite sufficient to identify the Aulád 'Ukba now in Kordofán as being connected with those Beni 'Ukbah whom Dr. Wallin met near 'Akaba in 1848 (*vide R.G.S. Journal*, vol. xx, Article xxi, 1851).

Dr. Wallin says of these people that they claimed to have once been a very large tribe owning the country between the Syrian desert and Dámá, and that they still held the important seaport of Muweilah, and were accustomed to escort pilgrims bound for the holy cities as far as their border at Dhoba. They also told Dr. Wallin that they had early in the history of Islam been divided into Musálima

and Beni 'Amr, and that these two sections quarrelled and the former expelled the latter from Muweilah and forced them to join the Hegáyá, with whom they still resided near Ṭafila. They added that numbers of their tribe had passed over into North Africa and that others had mixed with the Egyptian Fellahín.

Probing further into the descent of these Beni 'Ukba, Dr. Wallin quotes numerous Arabic authorities whose evidence further strengthens the assumption of connection between the two tribes whom it is my object to identify: the author of al 'Ibar corroborates the author of al Mesáliku-l-Abšár in saying that the Beni 'Ukba are bound to secure the road between Egypt and Medína, and adds, "In Afrikiyah in the west there are some of them as well as in the neighbourhood of Terablús" (Tripoli). The same authors both mention "the Beni Wáşil whose abodes are in Egypt as being a branch of the Beni 'Ukba son of Moghrabeh, son of Gudhám of the Kaḥṭáníyeh," and Dr. Wallin also quotes el Kaḥkashendi in support of the descent of the Beni 'Ukba from Gudhám the Kaḥṭání.

A word must be said here as to this Gudhám:—he and Lakhm are said by Abu-l-Fidá to have been the sons of 'Adí son of 'Amr son of 'Abd Shams Sabá son of Yashḥub son of Ya'arib son of Kaḥṭán the brother of Fáligh. Now Fáligh is of course the ancestor of the prophet Ibráhím and through him of Ismá'il and thus of all the Must'ariba Arabs including 'Adnán and the Prophet himself. Kaḥṭán, on the other hand, is known as the ancestor of the true "'Arab el 'Ariba." These latter lived at first in Southern Arabia but at some very early period many of their tribes (notably Ṭay) migrated north to the parts round Jebel Shomer, where they mixed with the Nejed tribes, and to a great extent became nomads. In the time of the Prophet Islam received no support from the Eastern provinces for the reason that they were under Kaḥṭánite domination, and for a like reason the greater part of Ṭay was only converted to Islam from Christianity by the sword of Khálid ibn Walid.

The Kaḥṭánites of South Arabia have a large amount of African blood in their veins from intermarriage with Abyssinians, Galla, and other tribes on the African mainland: and probably the early Kaḥṭánites who, as we saw, displaced the Must'ariba Arabs in the north had even more.

The Beni 'Ukba then may roughly be said to be descendants of the Kaḥṭánite Arabs who came north and became fused with the impure Syro-Egyptian Must'ariba stock (personified by Ismá'il) who, in their turn, no doubt already contained a plenteous leaven of Kurds, Copts, Turcomans, Phœnicians, Armenians, etc., in their ranks. At what time the Beni 'Ukba crossed into Egypt, and how long they have taken to reach their present home is difficult to say. Since they have maintained their name intact it seems probable that they immigrated together under one of the various Governors of Egypt after A.D. 640; and it is possible that the truth hidden in the legend of descent from 'Ukba ibn 'Ámir (or Yásir) is that he came to Egypt accompanied, as the custom was, by a motley host of Arabs, chiefly of his own kin, and that these Arabs took the name of Aulád (or Beni) 'Ukba. Marmol (*c.* 1520) calls the Aulád 'Ukba a branch of Beni Helál, and estimates their military forces at 11,500

men in Algeria. They were previously mentioned by Leo Africanus (c. 1495–1552) under the name Hucben as a branch of the same tribe and as being in the pay of the King of Tunis, “a rude and wilde people and in very deade estranged from all humanitie.”

So much for the Aulád 'Ukba.

Again, among the sections of the Kabábish enumerated above, two familiar Arabian names will be noticed, viz., Guhayna and 'Atawia.

As regards the former, there is no doubt of their identity with the great and ancient Arabian tribe of Guhayna. These Guhayna are also Ẓaḥṭānites, being a section of Ẓoḍā'a.

Dr. Wallin again quotes Ibn Ayás as saying “To Tebúk are assigned the tribes of Lakhm Guhayna Gudhám and other Bedouins.”

Ibn el Athír, author of *el Kāmil*, mentions the same fact, and Abu'l-Fidá (*Historiæ Anteislamicæ*) speaks of “the great tribe of Guhayna from which are descended many other clans,” and who live in the Hegáz.

They are still a large tribe in the Hegáz mountains, and Burton identified them with that tribe of Ḥetaym held in such disrespect by the Bedouins, and the Beni Kelb: he says that they extend from the plains north of Yanbu' (which were granted them by the Prophet in 624) into the Sinaitic peninsula, and are a noble race and good fighters.

Mr. C. M. Doughty also mentions them among the “strong, free tribes” near Teima, and speaks of a village about forty miles east of Kheybar where inter-marriage with Guhayna and Ḥeteym had made the villagers lighter in colour of late years.

Guhayna were well represented among the tribes which flocked into Egypt, since we find “el Guhani” frequently affixed to the names of officials in Egypt under the Khalifate; and Maḥrízí, early in the fifteenth century, mentions among the six most numerous and potent tribes of Upper Egypt “Guhayna and Beni Kelb.” Guhayna are mentioned by El Nuayri with the Fezára as taking part in the expedition of 647; by Ibn Sa'íd as being settled in great numbers between Syene and Abyssinia; by Maḥrízí as established at Manfalút and Assiút and as being the most numerous and powerful of the Arabs in the Sa'íd.

It will be remembered too that it was Guhayna and Rabí'a who in 869 invaded the Bija country and settled among that people. Great numbers of them, I believe, are still living east of the Nile, and many of these have immigrated within the last few years. Others are to be found in Bornu and Dárfúr. As a matter of fact the Ḥamar, Dár Ḥámíd, Kabábish, and other tribes in Northern Kordofán, all claim descent from a certain 'Abdulla el Guhani of the tribe of Guhayna. No one can say who he was or when he lived, but ingenious fakís naïvely disregarding (or rather not knowing) the Ẓaḥṭānite origin of Guhayna, persist in attributing to it a descent from 'Adnán the Ismá'ílític ancestor of the Prophet. In this case, by a curious but natural reversal of opinions, the Ẓaḥṭānite origin is not considered of sufficient nobility, and a connection with the Prophet is therefore invented to

enhance it. On precisely contrary lines Arab historians, realizing the superior purity of the Kaḥṭānite blood, but being unwilling to admit that the Prophet's ancestry was from a less pure stock, presented Ismá'il with a fictitious wife of the noble Kaḥṭānite children of Gurhum and ignored the Jewish version (followed elsewhere almost slavishly) that Ismá'il was given a wife from the land of Egypt.

It is noticeable that the Guhayna (and one other section of whom mention will be made later) alone of the Kabábish brand their camels on the left side; and this is undoubtedly because they were until the last century entirely separate from the rest of the Kabábish, who invariably brand on the right side.

Of the numerous subtribes of Guhayna, the Laḥáwiin with their sections are the only one now represented with the Kabábish.¹

With regard to the 'Aṭawia (*i.e.*, Beni 'Aṭia) I do not know of any direct evidence that they are connected with the Beni 'Aṭia of Arabia, but it seems very probable, since Beni 'Aṭia have long been a great tribe and are frequently mentioned together with Guhayna and the other tribes whose names recur again and again among or alongside of the Kabábish.

Palgrave computed their numbers in Jebel Shomer at about 6,000, and says they and Ḥarb infest the pilgrim road to Medína.

Mr. Doughty mentions them also as subject to the Amir of Hayil and living with Guhayna near Teima and on the western borders of the Hayil dominions. Dr. Wallin too found 'Aṭia in the plains of al Ḥismá east of Muweilah, and they claimed large territories round Tebúk (where Guhayna also lived, it may be remembered. in the times of the Arab historians).

The 'Aṭawia in Kordofán are always counted as closely related to the Kawáhla, one of the largest tribes in the Sudan. Of the latter, who claim descent from Zubayr ibn el 'Awám el Ḳorayshi (the famous butcher cousin-german of the Prophet) the greater part were subject to the Kabábish until the outbreak of the Mahdía.

It may be noted that the Kabábish 'Aṭawia have kinsfolk of the same name among the Rizaykát Arabs of Dárfúr. These Rizaykát are Baḳḳára and of the same descent as the majority of the Kordofán Baḳḳára. It may be a mere coincidence that the Kordofán Baḳḳára unanimously name as their common ancestor 'Aṭia, whom, if pressed, they somewhat perfunctorily connect with the inevitable 'Abdulla el Guhani; but in the course of years and in their movements from North Africa through the Western Kingdoms, they have forgotten all details of their history and origin, and merely remember a few names.

Perhaps it would be fantastic for no other reason than this to assume that they are connected with the Arabian Beni 'Aṭia: it is just possible, however, that the Beni 'Aṭia, after entering Egypt, divided their forces, some going on west through Tripoli and finally moving south till they became Baḳḳára in Kordofán and Dárfúr, and others staying awhile in Egypt and gradually drifting up the Nile till they joined the conglomeration of tribes that is now called Kabábish.

¹ Since this was written the Laḥáwiin have crossed to the east bank of the Nile with a view to rejoining the Guhayna there.

The Beni 'Aṭīa, like the Fezāra, joined the invasion of North Africa by the Beni Helál, being at that time counted a branch of the great Helála tribe of Athbeg. Ibn Khaldún says they resided in the province of Constantine but became enfeebled and few in numbers. In spite of this, however, we have the authority of M. Carette that in the middle of the last century there were some 3,000 of them in Constantine among the Arab and Berber tribes and 500 or so in the Sahara.

Another well-known Arabian tribe that has most probably contributed largely to the formation of the Kabábish is Fezāra.

Fezāra are mentioned by Abu-l-Fidá as being among the descendants of that Dhubiyán (of the Ismá'īlitic tribe of Ḳays 'Aylán) who though in reality son of Baghídh of the tribe of Ghatafán is quoted in the *nisbas* of the present as son of 'Abdulla el Guhani and therefore ancestor of so many tribes of Kordofán. It was in A.D. 627 that Fezāra, Guhayna, and other tribes marched against Medína, and gave continuous trouble to the Prophet till their final subjugation. They mixed extensively with the Ḳaḥṭánites and colonized the eastern coast of Arabia when driven from Nejed.

Now the Fezāra were in the eighteenth and nineteenth centuries one of the best known tribes in Northern Kordofán, as travellers have testified, and in fact the name seems to have been loosely applied to any camel-owning tribes. The Beni Gerár, who have long been neighbours of the Kabábish, say that "Fezāra" is the name by which they were commonly known; and in the map appended to Sheikh el Tunísi's account of his travels in Dárfúr at the beginning of the nineteenth century the Beni Gerár are included in a group called Beni Fezāra. Mentions of the Fezāra are by no means lacking in the Arab writers:—from El Nuayri we know that some of them took part in the expedition of 'Abdulla Ibn Saad westwards from Egypt in A.D. 647. Ibn Khaldún tells us that a number of them were with the Beni Helál in their great invasion of the eleventh century; and Idrisi (c. 1154) speaks of the territories of old Ptolemais as inhabited by Zenáta and Fezāra whom he calls Berber tribes arabised. Ibn Sa'íd and Maḳrízí mention a colony of them near Barca from the thirteenth century till the fifteenth. In 1853 there were still some of them in the province of Constantine according to M. Carette the Algerian explorer.

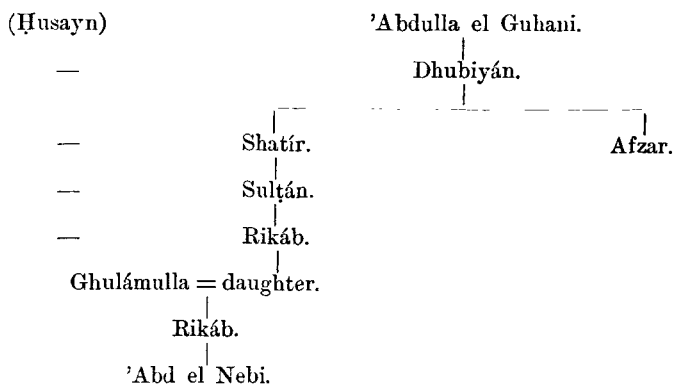
There is still a section of Ḥowáwír called Fezárab, and no doubt there are other remnants of them scattered among other tribes.

Other sections of the Kabábish are again of varied origin. The earliest recruits to the ranks of the original community are said to have been the Ruwáḥla and the Aulád 'Ōn. Not long afterwards the Serágáb, Ḥowal, and Núráb, unwilling to relinquish the nomad life and settle permanently on the river, sought safety in numbers and attached themselves to the Aulád 'Uḳba, Ruwáḥla and Aulád 'Ōn.

Since the Núráb are the ruling clan they will be dealt with first.

By race the Nuráb claim to be Rikábía, and in a *nisba* first compiled in Dongola in A.D. 1738 and recopied with additions in 1836, a careful distinction is

drawn between three different persons of the name of Rikáb, viz.:—(1) Rikáb of the Beni Ka'ab; (2) Rikáb, son of Sultán son of Shatír (the brother of Afzar ancestor of the Fezára) son of Dhubiyán, son of our old friend 'Abdulla el Guhani; (3) Rikáb, son of Ghulámulla (a sherífi descended from H̄usayn). Number (2), who was also the maternal grandfather of Number (3) is regarded in the *nisba* as the ancestor of the Rikábía of Upper Egypt, and 'Abd el Nebi son of Number (3) was the father of Shakára, who again is called ancestor of the "Núráb who live at el 'Afāt in Dongola, some of whom joined the Kabábish and multiplied with them and became nomads." This may be made clearer by a table thus:—



In some *nisbas* a mythical *Kabsh*—"ancestor of the Kabábish"—is worked in as son of Afzar or as a nephew or a son of Dhubiyán.

We may then assume that the Kabábish (even if they did not at that time possess the name) after reaching Dongola in their southward movement, were joined by some Rikábía calling themselves Núráb.

[It may be noted here that this affixing *-ab* to denote a patronymic is not so used among any of the Kordofán tribes or sections which have not come from the north-east; *e.g.*, it is unknown among the Baḳḳára proper.]

Were it known whether the Núráb at once assumed the chieftainship of the tribe or not, it would be comparatively easy to fix roughly the date of their adhesion, since the present Shaykh 'Ali Walad el Tóm, nephew of the loyal Ṣálih Bey Faḍlulla, represents the ninth generation from Kurbán. This Kurbán was of the Ribayḳát section and the first of that family to hold the chieftainship. Before his death he surrendered it to his sister's son Kerádim (of the Núráb) from whom it has since been handed down from father to son.

Another very large and scattered section of the Kabábish is the Serágáb. The Kenána of Kordofán, who are Arabs of what is comparatively speaking very pure descent from the noble Kenána of Arabia, of whom Ḳoraysh themselves were but an offshoot, say that their tribal faki traces his descent to 'Abd el Muṭallib through a certain Idris Serág who lived fifteen generations ago—*i.e.*, about A.D. 1300. This Idris Serág the Kenána declare to be the ancestor not only of the Serágía (one of the main divisions of the Kenána in Kordofán) but of the Serágáb who are incorporated with the Kabábish: additional proof of this is afforded by

the fact that the Serágáb in the Dervish revolt split away from the Núráb and joined the Kenána with whom they claimed kinship. This is the more worthy of note since the Kenána are better informed than is usual as to their past history; and the fact of the identity of the ancestor of the Serágáb Kahábísh (or their nucleus at any rate) with Idris Serág, if established, gives us some idea of the time and circumstances of the migration of these particular Arabs to Africa. It is said that the father of Serág was Manşúr ibn el Seyyid-Ahmed Zubbad el Baḥr and that on his father's death he quarrelled with his brothers at Mecca, where he resided, and was turned out and fled to Egypt and received the nickname of "el Ḥardán." From Egypt he went to the Sudan, where he married two wives, one from the Gamu'ía (a tribe of Ga'alín descent) and one from the Maḥass, and had six sons from whom are descended the sections of the Kenána in the Sudan.

This Serág lived, according to the *nisba*, fifteen generations ago and eighteen generations after 'Abd el Muṭallib: this total of thirty-three generations, if the generation be reckoned at the allowance of forty years, gives a total of 1320—*i.e.*, approximately the number of years that have passed since the time of 'Abd el Muṭallib. The Kenána *nisba* therefore is not necessarily so incredible as the majority of those produced by other tribes. So, if it be allowed that the Kenána Serágía and the Kabábísh Serágab are identical in origin, it may be supposed that some Kenána emigrated from Arabia into Egypt about the beginning of the fourteenth century and pushed their way up the river as far as Dongola, and there temporarily settled and intermarried, and later split into various sections, of whom a part went south with their kinsmen and a part eventually attached themselves to the Kabábísh. In fact they probably had many ties of kinship with some sections of the Kabábísh already, since the Kenána are of Nejedean origin, and have long been settled on the east coast of Arabia among the Kaḥṭánite tribes and Fezára. It is by no means suggested that there were no Kenána to speak of in Africa before the fourteenth century, for we have the authority of Maḥrízí among others to the contrary.

To take another section of the Kabábísh:—The 'Awáida are so called because their founder's name was 'Áid. This 'Áid was a famous faki on the Blue Nile or one of its tributaries, and it is related of him that some unbelieving "Turks" doubting his powers asked for a sign. He promptly declared he would do anything that was suggested. The Turks said, "Draw milk from the air:" 'Áid did so. The still incredulous Turks then demanded blood from the air: this also was miraculously performed. The Turks, not yet convinced, said that they would not believe in 'Áid's powers until he brought the dead to life. Áid at once took a sword, cut off the heads of seven of the bystanders, and then gathering up the heads off the ground replaced them on the necks of their owners, who had suffered no harm at all from the performance and showed no signs of doing so in the future. The Turks were perforce convinced at last and 'Áid was deservedly known thenceforward as 'Áid el Ruús ('Áid of the Heads).

An investigation of the names and origins of the subsections of these 'Awáida

however clearly shows that all of them are not of the same race. They are divided first into two divisions: 'Awáida Beyyiḍ and 'Awáida Zurruḵ. These distinctions of colour refer not to the men of the tribe but to their camels. The Zurruḵ, when they joined the tribe, brought with them a very dark breed of camel, and received their nickname in consequence. The fact, mentioned by Mr. C. M. Doughty, that these dark camels are peculiar to the southern and middle tribes of Arabia, such as Ḥarb, Metayr, and Ataybán may possibly afford a clue to the origin of the 'Awáida Zurruḵ.

The Beyyiḍ include some Bisháriín of Bija origin from the Eastern desert, and some of the Aulád Kanz mentioned above as living round Assuán.¹ A third division is for the sake of euphony called "Adnáláb"; the name is written, however, "Adlánáb," and the presumption is that its bearers are of Fung or Hameg origin, since the name Adlán was common in those tribes. The name was held by the most powerful of the Sháikía tribes in Burekhardt's time. The Fung, who for centuries ruled Sennár and most probably Southern Kordofán, are thought to have been a blend of blacks (allied perhaps by race to the Shilluks) with Arabs; but it would be beyond the scope of this paper to pursue the matter further.

Some approximate idea can be gained as to the date of the coalition of the section called 'Awáida with the Kabábish from the fact that 'Áid is said to have been the father of that Ghulámulla whom we have met before as the father of Rikáb, ancestor of the Rikábía; and from the present day to Rikáb is generally reckoned eleven generations—*i.e.*, 300 to 400 years.

Living among the Kabábish also is a small offshoot of another famous tribe—viz., the Aulád Sulaymán. These Aulád Sulaymán had originally settled between the great Syrtes and Fezzán, but owing to dissensions with the ruler of Tripoli they migrated in large numbers to Egypt. About 1811 they returned to Fezzán but were almost annihilated four years later. When they had sufficiently recovered their strength they began moving southwards upon Borgu and Kanem and again became the terror of the country. However, in 1850 they had so seriously provoked the Tuareg Berbers that the latter attacked them in force and almost annihilated them for the second time. After this they apparently remained in Bornu and recouped their energies until they were again sufficiently strong to terrorize every tribe with whom they came into contact. Some of them are said to have been employed as mercenaries by the "Turks" in the nineteenth century.

Another of the Kabábish sections which is clearly distinguished from the rest of the tribe is the Berára. These people are Ga'aliín, who have joined the Kabábish comparatively recently and become subject to them: a sure indication of this is the fact that they, like Guhayna, brand their camels on the left side. Any attempt at the discussion of the origin of the Ga'aliín, a tribe probably as complex in original formation as the Kabábish, would lead to an undue prolixity.

¹ The 'Awáida Kanzáb, since this was written, have left the Kabábish and joined the 'Awáida east of the Nile.

It is now time to make some further mention of those previous accounts of the origin of the Kabábish to which allusion was made earlier.

The chief point for my purpose is that Mr. Parkyns in his article says, "The Kabbabish date their origin from the Howára, a tribe of Upper Egypt said to be of Móghrebín extraction, and who fled from Tunis, being driven thence by Abou Zeyd-el-Hillaly." This tradition is reproduced by Petherick and Sir C. W. Wilson on the authority of Mr. Parkyns. Now the Howára are mentioned as a Berber tribe by all the Arab historians, and they recount their prolonged struggles with the invading Arabs. Thus, too, in A.D. 706 among the five noblest Berber tribes in Morocco, from whom the Arabs took hostages, were the Howára. Since el Maḡrisí mentions that those Howára who conquered and held Upper Egypt in Mamlúk times were of Berber origin there is no doubt that Mr. Parkyns' informant was correct in saying that the Howára were of Moghrabín (or Moorish) extraction, but that they had amalgamated with the Arabs and gradually wandered farther and farther south, retaining their Berber name, but calling themselves Arabs.

The Howáwír, at present in Dongola, though neighbours of the Kabábish, are now separate from them; but since in Mr. Parkyns' time the Howáwír—(whom Sir C. W. Wilson, by the way, speaks of as being "of pure Arab blood")—were only counted a section of Kabábish, it seems most probable that the tradition of the descent of the Kabábish from the Howára either originated from one of these Howáwír who was anxious to glorify his own people in the eyes of Mr. Parkyns, or at least referred exclusively to them. It is quite certain, at any rate, that any tradition which gives a single origin to the whole of the Kabábish must necessarily be inaccurate. It is true that the name of the Berber tribe and that of the tribe in Upper Egypt is spelt حوارة whereas the Dongola tribe at present spells its name هواوير (singular هوارَة); but the evidence of identity is too strongly backed by probability to be disregarded. Present day spelling, too, is frequently inaccurate. The fact that Howáwír is used as a plural nowadays instead of Howára is quite unimportant; indeed, a section of the Dongola Howáwír long settled in Kordofán near el Obeid still use only the form Howára.

The mention of Abu Zayd el Heláli is of no weight, since with the Arabs of Kordofán almost any important event that occurred in the dim past is in some way or other connected with the names of this wholly or half-mythical and altogether extraordinary hero and his Helála, in much the same way as Mr. Doughty found most old rock pictures and stone circles and middens in Arabia attributed to the Beni Helál.

In view of the fact that about A.D. 1051 the Fátimids, as an attempt to reassert their waning power, sent the great tribe of Helál to bring back Mo'izz, the recalcitrant Berber Governor of Northern Africa to his allegiance, and that Helál after partly defeating Mo'izz occupied Barka and Tripolis, it seems likely that it was at this time that the Howára began their southern movement under the pressure of Helál. Some accounts of the fabled exploits of Abu Zayd, and the romance of the Taghríbát may be found in Lane Poole's *Manners and Customs of the Modern Egyptians*, chapter 21.

By a comparison of the list of the sections of the Kabábish as given above and as given by Mr. Parkyns, one will not fail to perceive other notable instances, besides that of the Ḥowára, of the ever recurring changes to which the composition of a tribe is liable. Mr. Parkyns, for instance, includes among the Kabábish not only Ḥowára but el Aḥamda (*Lahamdy*), Kawáhla, Baṭáḥín, and Shenábla: each of these, like so many of the present sections, is by race virtually distinct, and has now either rejoined the main body of its kinsmen from whom it had split away to join the Kabábish, or has formed itself into a separate tribe. We may note as regards one of the tribes mentioned above, viz., the Shenábla, that Burekhardt speaks of *Esshenabele* as a predatory people to the south-east of Damascus, living in the hills.

A word may be said here as to the meaning of the word *Kabábish* (singular *Kabbáshí*). The Kabábish themselves if asked will often say they had an ancestor called Kabsh; this person, as we noted, occasionally appears in *nishas*, generally as son of Afzar son of Dhubiyán son of 'Abdulla el Guhani. More frequently Kabsh does not appear in the *nishas* at all. He has no doubt been simply invented as a convenient ancestral figure-head with a view to proving the racial unity of the tribe. Nothing further is ever related of him, nor is insistence laid upon his having ever existed. There is little doubt I think that (as Mr. Parkyns says) *Kabábish* is simply derived from *Kabsh*, i.e., "a male sheep": the tribe was once perhaps a weak and poor community, and owned no great herds of camels as they do at present, and may have been given their name slightly at first. Little importance need be given to Müller's statement in his edition of *Claudius Ptolemaeus* that the Gapachi mentioned as living beyond Meroë are the present Kabábish.

The nomenclature of one or two Arabian tribes may be adduced perhaps as supplementary evidence of this if such be needed; e.g., the name Ma'áza would seem to be derived on similar lines from *ma'az* (goats), and 'Aneza is suggestive of 'anz, another word for a goat.

Enough has now probably been said to demonstrate that it is a highly complex conglomeration of component parts that forms the tribe of Kabábish, and the fact was emphasized by the revolt of the Mahdi. The tribes that had long been living together as Kabábish mostly remained firm and loyal with Ṣálih Bey Faḍlulla. Those later adventitious recruits who had only attached themselves for the sake of protection and the advantage accruing from a participation in the rights and privileges of the Kabábish as a rule broke away and joined the revolt. After its suppression, some of them, e.g., Guhayna and Berára, returned to the ranks of the Kabábish, and others, being strong enough to stand alone, remained permanently separate, e.g., the Kawáhla and Shenábla.

It may be objected, not unjustly perhaps, that the Kabábish are an exceptionally loosely connected community, and that to assume a like complexity of formation in the case of every other tribe would be unfair. This may be so. I do not know, but it is fairly certain that if close examination be made into the

antecedents of the component parts of any other tribe, a complexity, similar at least in character, if not so immediately recognizable by reason of its extent, will be found.

After all, one must consider the question from a double point of view. In the first place, what now appear as wide divergences of race among the individuals of a single tribe, may not date from a period more than a few hundred years ago, and even so the divergent elements may be held to have sprung in bygone ages from one and the same original stock; and in the second place, however far back one seek for such an original stock, when one has found what seems the object of one's search, it will be found capable of further subdivision into elements of which the respective origins are shrouded in impenetrable darkness.

THE ARRIVAL OF MAN IN BRITAIN IN THE PLEISTOCENE AGE.

The Huxley Memorial Lecture for 1910.

By W. BOYD DAWKINS, M.A., HON. D.Sc., F.R.S., Hon. Professor of
Geology in the Victoria University of Manchester.

INTRODUCTORY.

It was with very mixed feelings that I accepted the highest honour that the Royal Anthropological Institute has to offer, of giving one of the Huxley Memorial Lectures, and of following the eminent men who have preceded me as lecturers. In my youth, after leaving Oxford in the sixties, I fell under the influence of Huxley, sat at his feet as a junior colleague in Jermyn Street, and left the Geological Survey on his advice to take up my life work in Manchester. While doing pioneer work there in organising the museum, and the geological department in the Owens College, that ultimately grew into the first of the provincial universities, he was my guide, philosopher and friend,—a never-failing refuge in times of stress and difficulty. In a word, his influence has moulded my life and work. On these grounds, therefore, I feel peculiar pleasure in giving this lecture. On the other hand, I fully recognise that the principal work of anthropology at the present time is in the direction of the accumulation of materials for the use of the future master builder. The foundations of the science are practically now as they were left at Huxley's death, and the building has not yet risen far above the ground. The materials piled up in the hope of being used, good, bad, and indifferent, are vast in extent and are rapidly receiving additions from workers all over the world. The time, however, has not yet arrived to build. The non-heroic task alone is left of classifying the observed facts and of testing the value of hypotheses. In this lecture I propose to discuss the antiquity of man as revealed in the geological record, and of the conditions under which palæolithic man arrived in Britain.

The Classification of the Tertiary Period based on the Evolution of the Higher Mammalia.

Before we can discuss any of the above questions it is necessary to define the subdivisions of the Tertiary period. The classification which I proposed in 1880

still holds the field with but slight modifications. It is based on the appearance in orderly succession of the higher Eutherian (Placental) mammals, that were then, as Professor Gaudry happily puts it, *en pleine évolution*, and on the gradual approximation of the successive mammal-faunas to that now living in Europe. It applies equally to the Tertiary faunas of Africa, Asia, and the Americas, and in Australia the same principle may be applied to the lower groups of Prototheria and Metatheria. It is as follows:—

Table of Divisions of Tertiary Period.

VI. The Historic Period in which the events are recorded in history.	Documents and events connected with them.
V. Prehistoric Period in which domestic animals and cultivated fruits appear and man has multiplied exceedingly on the earth.	Ages of Prehistoric Iron, Bronze, Neolithic Ages.
IV. Pleistocene Period in which living species of mammalia are more abundant than the extinct.	Palæolithic man, living species of Eutherian mammals abundant.
III. Pliocene Period in which living species of mammalia first appear, and the extinct species are preponderant.	Living species of Eutherian mammals appear.
II. Miocene Period in which all the species are extinct.	Living genera appear.
I. Eocene Period in which there are no living genera. The mammalia now on the earth are represented by allied forms belonging to existing families and orders.	Living families and orders appear.

I have omitted the Oligocene division of the continental palæontologists, because it groups together two distinct and consecutive phases of mammalian evolution—the Anoplotherian of the Upper Eocene, and the Deinotherian of the Lower Miocene.

The specialisation of the mammalia implied in the above table is represented in the following diagram, in which it will be observed that orders, families, genera and species fall into the shape of a genealogical tree, with its trunk hidden in the Secondary period, and its branches and twigs passing upwards through all the stages to the present day—a tree of life, with the living Eutherian mammalia for its fruit and foliage. Were the extinct species taken into account it would be seen that they fill in the intervals between the living forms and that they approximate to the living species in proportion as they approach nearer to the present day.

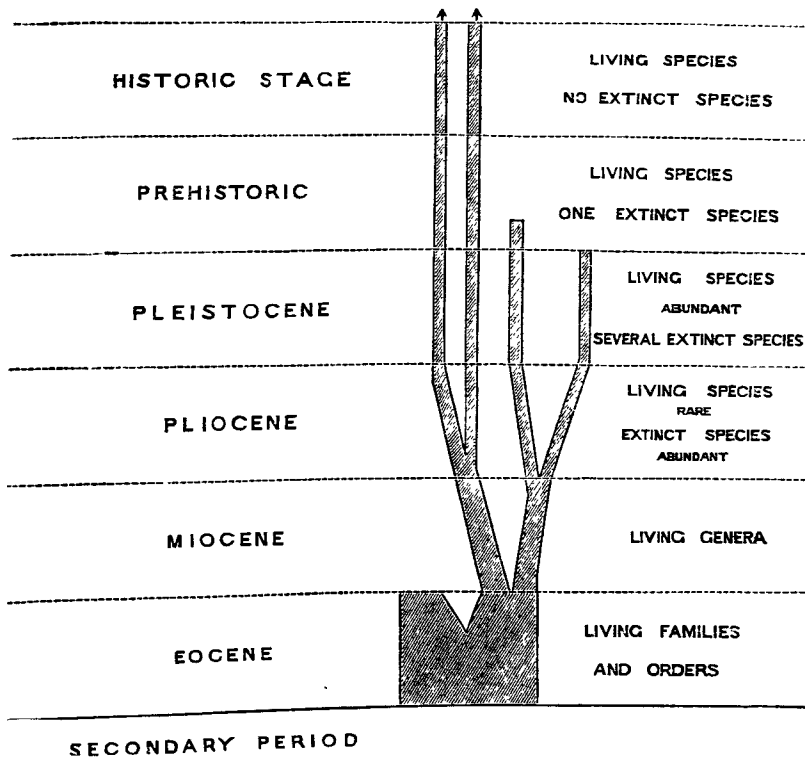


FIG. 1.—DIAGRAM SHOWING THE SPECIALISATION OF THE EUTHERIAN MAMMALIA IN THE TERTIARY PERIOD.

No Evidence of Man in Eocene, Miocene, or Pliocene Periods.

If this diagram, based upon the evolution of the mammalia, be used in our search for the first traces of man on the earth, it is obvious that we cannot expect to find the most highly organised of the mammalia in any portion of the geological record, where there are no other living mammalian species, or, in other words, in the two earlier stages of the Tertiary period. In the Eocene there are no living Eutherian genera, and in the Miocene no living Eutherian species. In the latter the Primates are only represented by the higher anthropoid apes—the *Dryopithecus* and others. We can only look for man in the Pliocene age, when the living forms come in, and only expect to find him in the Pleistocene, when the living Eutherian forms were dominant, and the face of nature as a whole was almost as it is to-day. The general evidence as to this, as was pointed out in 1880,¹ is simply overwhelming, and it still holds the field.

The evidence that man was living in France in the Miocene age, based upon the flints collected by Bourgeois at Thenay, has long ago been rejected as worthless,² because it is not certain that they really came from the Miocene strata of the district, and because some of them, now preserved in the museum at St. Germain's,

¹ Dawkins' *Early Man in Britain*, 1880, Macmillan, pp. 66-67.

² *Op. cit.*, pp. 66-68.

bear plough marks, and are obviously derived from the surface, and because others are probably the result of natural agents without the intervention of man. More recently it has been rejected both by MM. Boule and Déchelette.¹

A second alleged case of the discovery of worked flints by M. Rames in 1877 in the upper Miocene strata of Puy Courny, near Aurillac in, Cantal, is equally inconclusive. Here flakes, more or less chipped at the edges, and other battered and chipped specimens, have been taken by MM. G. and A. Mortillet, Quatrefages, Capitan, Chantre, and others to be of human workmanship. Here, again, the two above-quoted eminent authorities, MM. Boule and Déchelette,¹ point out that they do not present any proof of having been fabricated by man. When we consider that the mammalia found in the same deposit are Deinotheres and Hipparion, it is obvious that there is no place for man in this mammal fauna. Had man been living on the earth in the Miocene age he would, like every one of the other living mammalia of the period, be represented by a form differing from man in the same manner as the Deinotheres differs from the existing elephants and the three-toed Hipparion from the living horses. It is incredible that man alone of all the mammalia living at the time in Europe should not have either become extinct, or changed into some other form in the long lapse of ages separating the Miocene period from the present day, during which many of the Miocene genera, and all the species, have become extinct. Those who believe in the doctrine of evolution will see the full weight of this argument against the presence of man in the Miocene fauna, not only of Europe, but of the whole world. If evolution be true, there is no place in nature for man until the Pliocene age, when the living species first appear.

All these considerations have, however, been ignored by the eminent Belgian geologist, M. Rutot,² who holds that man is proved not only to be of Miocene but of the earlier ill-defined Oligocene age, on account of the presence of "eoliths" or broken and chipped flint in the deposit of Boncelles, in the valley of the Ourthe. In coming to this conclusion he has assumed, in common with many others in this country and on the Continent, that eoliths could not have been made without the intervention of man. We will therefore test the value of this assumption.

The Value of the Evidence of "Eoliths."

The name eolith,³ covers chipped and broken flints assumed to be artificial, or, if natural, to have been used by man. Originally it covered only the collection of rude implements made by Professor Prestwich,⁴ and Mr. Harrison from the high level clays, sands and gravels of Ightham in Kent, that are to a large extent derived from the clay with flints, forming a mantle of subaerial *débris* over a large

¹ Déchelette, *Manuel d'Archéologie*, i, *Archéologie Préhistorique*, 1908, p. 19 et seq.

² *Bull. Soc. Géol. Belg.*, xx, xxi, 1907.

³ 1893, *Proceed. Geol. Assoc.*, xiii, p. 162; 1898, Cunningham, *Quart. Journ. Geol. Soc.*, Lond.

⁴ *Quart. Journ. Geol. Soc.*, xxi, 1891.

part of southern England. In many cases the clay has been washed away by the rain and streams, the sands and gravels being left behind, in plateaux and terraces at various levels above the present stream.

The plateau in question is some 600 feet above the sea, and from it numerous palæolithic implements of the ordinary river-drift (Acheulian) type have been obtained, as well as the ruder eoliths figured by Prestwich,¹ in 1891. Since that time the range of the eoliths has been extended to other deposits, mainly gravels, in various parts of Britain and Ireland—sometimes in association with the above well-known types, and of various ages, from the pliocene strata of Lenham, through the pleistocene and glacial deposits down to the shingle on the present shore line. The chief exponent of the Eolithic cult, as it may be called, on the Continent, M. Rutot, has found eoliths over a large portion of Belgium, Luxemburg and France, in various deposits ranging in the Oligocene to the Neolithic stage of the Prehistoric period. It is undoubtedly true that eoliths do occur in all these strata, but before they can be used as evidence it is necessary to show that they have been made by man, and could not have been made by any other agency in nature.

On this question the evidence brought before the Anthropological Institute in 1905, by Mr. Warren,² is absolutely conclusive. The eoliths may be grouped as follows:—(a) Those with battered surfaces formed by many impacts; (b) with flaked surfaces formed by the impact of sharp blows; (c) with chipped edges formed either by impacts, or by pressure on the edges. They can be formed, and in all probability were formed, naturally in various ways, by earthquakes, by wave action, by torrents, rivers and floods, by the pressure of the creep of the soil ever on the move from the higher to the lower grounds, by the action of land slides, by the drag of ice and by the sinking of the gravel beds, owing to the solution of the rocks below, by the carbonic acid in the rainwater. It has further been proved by experiments, carried out in England by Mr. Warren, and in France by MM. Capitan and Boule,³ that even well-known palæolithic types, such as scrapers and re-touched flakes, can be formed accidentally by the pressure of the human foot, and by the hurtling together of flints in a cement mill. The researches of the Abbé H. Breuil, published in the current number of *l'Anthropologie* (xxi, pp. 385–408), complete the case against the eoliths. He has proved that the eoliths in the gravel at the base of the Thames sand or lowest eocene strata of Belle Assise (Oise) have been formed naturally by the pressure and movement of one flint upon another, resulting in chips with conchoidal fractures, “bulbs of

¹ Prestwich, *Quart. Journ. Geol. Soc.*, xxi, p. 24. It may be noticed that the first two out of the three plates illustrating this paper represent eoliths, while in the third there are specimens of the river-drift (Acheulian) type found in the same plateau gravel.

² S. Hazzledine Warren, “On the Origin of Eolithic Flints by Natural Causes, especially by the Foundering of Drifts,” *Journ. Anthropol. Inst.*, xxxv, p. 337, pl. 26. Also *Man*, 1905, p. 103; 1906, p. 3.

³ Capitan, *Revue de l'École d'Anthropologie*, 1901, xi, p. 151; Boule, “L'Origine des Eolithes,” *Anthropologie*, 1905, p. 263.

percussion," and secondary chipping, and sometimes in shapes indistinguishable from worked flints, scrapers, and other well-marked palæolithic implements. Even M. Rutot failed to distinguish them, and assigned them to his "stréptyen" or age of transition from the "eolithic" to the palæolithic period. That they were formed within the mass of gravel, by natural causes, is proved by the fact that, in many cases, the chips and flakes rested almost in place on the blocks from which they had been broken. With all these facts before us it is impossible to admit eoliths are evidence of man's handiwork, not only in cases where the study of the mammals renders difficult to believe that man could have been then on the earth, but also in cases which do not present that biological difficulty. It is, of course, accepted by all students of the progress of mankind that the simpler instruments must have been employed by man before he learnt to make the more complex, and that the points and sharp edges of flints and other stones were used before the more elaborate tools. If, however, ruder forms *can* be the result of accidents of nature, as has been shown above, they are of no value as archæological documents throwing light upon the problem of the first appearance of man on the earth.

As the evidence stands at present, and leaving eolithic flints out of account, the geological record is silent as to pliocene man. It is improbable that he lived in Europe at that remote period, since only very few of the mammals of the period—the hippopotamus and the axis and rusa—are now living on the earth. It is, however, clear that the close approximation of some of the Pliocene to living species marks the dawn of the order of nature to which man belongs, and in which, in the Pleistocene age, he forms the central and most imposing figure.

We may note, at this point in our enquiry, that there is no line of division between the Pliocene and Pleistocene sufficiently strongly marked to justify the classification usually adopted on the Continent, in which the Tertiary, or third, is mapped off from the Quaternary, or the fourth of the great life-periods. The evolution of the higher mammalia in Europe has gone on from the Eocene to the present day, in regular and comparatively orderly succession, as noted in the diagram (Fig. 1), and the present phase of life (the Historic) is merely the last of the long series which went before. We are living in the Tertiary period. When, therefore, MM. Boule and Déchelette agree in rejecting the evidence as to Tertiary man they mean the evidence as far down as the close of the Pliocene, or down to the end of that period in which I am unable to find evidence in the geological record of the presence of man on the earth.

The Precursor of Man in Java in the Pleistocene Age.

We come now to the period in which the existing mammalia were dominant, and in which, therefore, man may be expected to appear. The discovery in an old river deposit at Trinil in Java of the remains described in 1894, by M. Dubois,¹

¹ Dubois, "*Pithecanthropus erectus, eine Menschenähnliche Uebergangsform Aus Java*," 4to, 1894, Landesdruckerei. Batavia. *Verhandl. Berlin. Gesellsch. Anthropol. Ethn. et Urgeschichte*, 1895, p. 474.

revealed the presence of a form intermediate between the higher apes and man—the *Pithecanthropus erectus*, considered by Sir William Turner, Professor Cunningham, Dr. Topinard and other eminent anatomists to be the most ape-like of mankind, and by Sir William Flower, Drs. Marsh, Virchow,¹ Manouvrier and others equally eminent the most man-like of the apes. Looking at the dimensions of the skull the brain appears to me too large to be classified with the apes, and the erect posture implied by the femur,² although it is obviously diseased, is an additional reason for considering its possessor on the human side of the line dividing man from the anthropoid apes. Whatever view be taken, there can be no doubt that Drs. Garson and Keith are right in taking *Pithecanthropus* to be “a missing link.” With the attainment of the erect position, says Dr. Munro in his address to the British Association, and the consequent “specialisation of his limbs into hands and feet, man entered on a new phase of existence. With the advantage of manipulated organs and a progressive brain he became *Homo sapiens*, and gradually developed a capacity to understand and utilize the forces of Nature.”

The place of this singular precursor of men in the geological record is indicated by the remains of the associated animals. They consist of species now living in the oriental region, tapir, axis, Indian buffalo and rhinoceros and of extinct species, such as *Elephas stegodon*, hexaprotodont hippopotamus, and a gigantic manis. This association of living with extinct species proves the age to be pleistocene, and in my opinion, formed after a study of the faunas of the Nerbudda and the Sevalik Hills, to an early stage in that period. *Pithecanthropus* appears not only at the point in the geological record where he ought to appear, but in the tropical region, considered by Dr. Falconer and Lord Avebury to have been the probable birthplace of the human race. He marks the first great departure of man from the higher anthropoid apes, not only in brain but in hand.

The Arrival of Palæolithic Man in Europe and the Classification of his Implements.

We must now pass on to the consideration of the conditions under which man appears in Europe. The palæolithic implements found during the last half century in the river deposits and caves established the fact of the existence of a hunter in the Pleistocene period, ignorant of pottery, and not aided in the pursuit of wild animals by the dog, “the first servant of man,” and belonging to a mammalian fauna of living and extinct forms, ranging over the whole of Europe except the ice-covered region of Scandinavia.

¹ Virchow, *Verhandl. Berl. Gesellsch. Anthropol. Ethnologische*, 1895, p. 435 and p. 468.

² Dr. Munro, in his address to the Anthropological Section of the British Association at Nottingham in 1893, shows what an enormous influence the erect posture has exerted on the evolution of man, by setting free the hands from the necessity of being used as feet. The interaction of hand on brain, and of brain on hand, that has done so much to raise man from the level of the beasts, is worthy of the attention of those who deny the value of introducing handicrafts into the Elementary Schools.

In France the discoveries of Bourgeois in the river deposits of Amiens and Abbeville, and those of Lartet and Christy in the caves of Auvergne, have been followed up in Europe and Northern Africa by various observers, and have recently been crowned by the revelation of the marvellous frescoes in the caves of Auvergne, and of the Pyrenees by Cartailhac, Breuil, and others. To them we are indebted for the following classification :—¹

6. Magdalenien	}	...	...	...	Epoque du Renne.
5. Solutréen					
4. Aurignacien					
3. Moustiérien		...	...	...	Epoque du Mammouth.
2. Acheulien		...	...	...	Epoque du Mammouth et de l'Hippopotamus.
1. Chelléen		...	...	...	Epoque de l'Hippopotamus.

These divisions are based on the variation in the implements, and on the different groups of mammalia found along with them, and are taken to represent a chronological sequence. They are open to the criticism that it is not likely that the palæolithic hunters in the same region at the same time used exactly the same implements. At the present time there is a considerable variation in the equipment of savage tribes belonging to the same group, as, for example, in Africa, some being much better armed than others. Are the remains of the animals killed in the chase, and left behind in the refuse heaps, to be looked upon as throwing light on the relative numbers of the wild animals living in the district, rather than as showing those which were more easily captured than the rest?

Also the difference in the habitat of the mammals has to be considered. It has been shown by Cartailhac and Breuil,² that while reindeer were abundant in Southern France and the region of the Pyrenees, stags, bison, and horses occupied the district of Santander in Spain, and are represented in the frescoes of the cave of Altamira, which they assign to the Solutréen and Magdalenien times. It is in my opinion safer to view the above classification as useful in marking local phases of culture rather than as a definite system of chronological sequence³ of general application over the whole Continent. It does not apply to Great Britain, as I pointed out in 1880 in my work on *Early Man*. Here the three earlier groups of implements representing stages 1, 2, 3 occur together in intimate association in both the river deposits and the caverns, while the three later, 4, 5, 6, are so mingled together in the caverns that there can be no reasonable doubt that they belong to the same period of occupation. The British palæolithic implements also fall naturally into two groups, as Sir John Evans showed in 1872,⁴ those of the river-drift man and the

¹ Déchelette, *Manuel d'Archéologie*, i, *Archéologie Préhistorique*, p. 43. The names are based on the finds made in the caves of La Madelaine, Aurignac, and Moustier, in the camping ground of Solutré, and in the river deposits of St. Acheul and Chelles.

² Cartailhac and Breuil, *La Caverne Altamira*, 4to, Monaco, 1906.

³ Déchelette (*Archéologie Préhistorique*, 8vo, Paris, 1908) may be taken to represent the current view of French archaeologists on this question.

⁴ *Ancient Stone Implements of Great Britain*, 8vo.

cave man, the first being represented by the discoveries made in fluviatile deposits and by the lower horizon in the caverns of Kent's Hole and of Creswell Crags, and the second by the upper palæolithic strata in the above-mentioned caves, and by Wookey Hole, near Wells, and others. The first of these is immeasurably older than the second, and presents a stage in culture far lower than that of the second. We shall deal with them separately. It will, however, be necessary to review the pleistocene fauna of Britain before we can discuss either one or the other.

The Early Pleistocene Mammalia in Britain.

The mammalia of the forest-bed of Norfolk and Suffolk¹ represent the earliest Pleistocene group in Britain. They consist of the following species:—

*Survivals from the Pliocene, Living Species.*²

Hippopotamus, *H. amphibius*, L.

Survivals from the Pliocene, Extinct Species.

(2) Sabre-toothed lion, *Machairodus*.

Deer of Polignac, *Cervus polignacus*, Rob.

Deer of Etouaires, *C. etueriarum*, Cr. et Job.

Sedgwick's deer, *Cervus Sedgwickii*, Falc., *Cervus dicranios*, Nesti.

Etruscan rhinoceros, *R. etruscus*, Falc.

Big-nosed rhinoceros, *R. megarhinus*, Christol.

Southern elephant, *Elephas meridionalis*, Nesti.

(2) Stenos horse, *Equus stenonis*, Nesti.

New-comers, Living Species.

Musk shrew, *Sorex moschatus*, Pallas.

Shrew, *Sorex vulgaris*, L.

Common shrew, *S. vulgaris*, L.

(2) Continental field vole, *Arvicula arvalis*, Griffith.

Siberian vole, *A. gregalis*, Desm.

Water vole, *Arvicula amphibius*, Desm.

Red field vole, *A. glareolus*, Schreber.

Field mouse, *Mus silvaticus*.

Hamster, *Crictus vulgaris*, Desm.

¹ Dawkins, *Quart. Journ. Geol. Soc.*, 1872, London, p. 417. This list only represents the terrestrial mammalia. Mr. Clement Reid, *Mem. Geol. Survey, Geology of the Country around Cromer*, 1882, p. 2, assigns the Forest-bed to "the newer Pliocene." This is, however, negatived by the continental evidence as to the Pliocene mammalia, and it cannot be maintained, if the living and extinct species in the list be duly weighed. There are no Pliocene strata on the Continent containing these mammalia.

² On the authority of E. T. Newton, "Vertebrata of the Forest-bed Species of Norfolk and Suffolk," *Memoirs of Geological Survey of England and Wales*, 8vo, 1882. I am also indebted to Mr. Newton for the additions to the list made since that time.

Mole, *Talpa Europæa*, L.
 Squirrel, *Sciurus vulgaris*, L.
 Beaver, *Castor fiber*, L.
 Grizzly bear ? *Ursus ferox*, Lew. et Clark.
 Wolf, *Canis lupus*, L.
 Fox, *C. vulpes*, L.
 (2) Spotted hyæna, *H. crocuta* (var. *Spelæa*, Gold.).
 Glutton, *Gulo luscus*, L.
 (2) Marten, *Martes silvatica*, Nilsson.
 (2) Otter, *Lutra vulgaris*, Erxl.
 Wild boar, *Sus scrofa*, L.
 Horse, *Equus caballus*, L.
 Stag, *Cervus elaphus*, L.
 Roe deer, *C. capreolus*, L.
 Urus, *Bos primigenius*, Boj.

New-comers, Extinct Species.

Cuvier's beaver, *Trogontherium Cuvieri*, Owen.
 Cave-bear, *Ursus spelæus*, Goldf.
 Thick-antlered deer, *Cervus verticornis*, Dawk. (= *C. Belgrandi*).
 Deer of the Carnutes, *C. Carnutorum*, Falc.
 Broad-fronted deer, *C. latifrons*, Dawk.
 (2) Newton's deer, *C. rectus*, Newt.
 Irish elk ? *Megaceros hibernicus*, Owen.
 (2) Savins goat, *Caprovis Savinii*, Newton.
 Mammoth, *Elephas primigenius*, Blum.
 Straight-tusked elephant, *E. antiquus*, Falc.

In the above list the most important features are the incoming of mammals hitherto unknown in Europe, both living and extinct, and their association with the well-known Pliocene species of France and Italy. They formed the advanced guard of the migration of the Pleistocene mammalia into Pliocene Europe, and their arrival in Britain marks the dawn of the Pleistocene age. We must also note that the great majority of the living species are those now living in the temperate climates of Europe and Asia.

The strata in which these animals occur underlie the boulder clays of the Norfolk and Suffolk cliffs, and are therefore older than the glacial deposits of the district. The associated flora indicates a temperate climate gradually becoming colder.

I am unable to accept the eolithic evidence of Mr. Abbott,¹ that man was in Britain at this time, because the chipped flints from the Cromer forest-bed may be due to accident and not to design.

¹ *Natural Science*, x, 1897, p. 89.

The Mid-Pleistocene Mammalia.

The next stage in the invasion of Britain by the Pleistocene mammalia is that presented by the lower brick-earths of the Thames Valley in Kent and Essex.¹ They are as follows:—

Mid-Pleistocene Mammalia.			Ilford.	Grays Thurrock.	Crayford, Erith.
Survivals from Early Pleistocene—Living species = 11.					
Horse	<i>Equus caballus</i> , L.	...	×	×	×
Urus	<i>Bos primigenius</i> , Boj.	...	×	×	×
Roe	<i>Cervus capreolus</i> , L.	...	×	×	—
Stag	<i>C. elaphus</i> , L.	...	×	×	×
Hippopotamus ...	<i>Hippopotamus major</i>	...	×	×	—
Wild boar	<i>Sus scrofa</i> , L.	...	—	×	—
Fox	<i>Canis vulpes</i> , L.	...	×	×	—
Wolf	<i>C. lupus</i> , L.	...	×	×	×
Brown bear	<i>Ursus arctos</i> , L.	...	×	×	×
Beaver	<i>Castor fiber</i> , L.	...	×	×	—
Water-rat	<i>Arvicola amphibius</i> , L.	...	×	×	×
Survivals from Early Pleistocene—Extinct species = 4.					
Straight-tusked elephant	<i>Elephas antiquus</i> , Falc.	...	×	×	×
Mammoth	<i>E. primigenius</i> , Blum.	...	×	×	×
Big-nosed rhinoceros	<i>Rhinoceros megarhinus</i> , Christol.	...	×	×	×
Irish elk	<i>Megaceros hibernicus</i> , Ow.	...	×	×	×
New-comers—Living species = 9.					
River-drift Man	<i>Homo sapiens</i> , L.	...	—	—	×
Musk sheep	<i>Ovibos moschatus</i> , Desm.	...	—	—	×
Bison	<i>Bison prisus</i>	...	×	×	×
Grizzly bear	<i>Ursus ferox</i> , Lew. and Clark	...	×	×	×
Otter	<i>Lutra vulgaris</i> , Erxl.	...	—	×	—
Spotted hyæna ...	<i>Hyæna crocuta</i> , Zimm.	...	—	×	×
Wild cat	<i>Felis catus</i> , L.	...	—	×	—
Lion	<i>F. leo</i> , L.	...	×	×	×
Marmot	<i>Spermophilus erythro genoides</i> , Falc.	...	—	—	×
Man ... ..		...	—	—	×
New-comers—Extinct species = 2.					
Woolly rhinoceros	<i>R. tichorhinus</i> , Cuv.	...	×	—	×
Small-nosed rhinoceros	<i>R. leptorhinus</i> , Ow. (= <i>R. hemi-</i> <i>tachus</i> , Falc. = <i>R. Merckii</i> Kaup).	...	×	×	×

¹ These fluviatile are considered, by Prestwich and others, to belong to a late stage of the Pleistocene period, because they are at a low level. This, however, cannot be taken as a test of age, unless it is certain that the valley has been cut down by the river, now flowing at its bottom, leaving behind it, in the course of its excavation, terraces of gravels to mark its work, the higher being the older. It is also necessary to assume that the land has remained stationary at one level above the sea. In this case the valley was probably like most of the other British valleys excavated before the Pleistocene age, and has since been subjected to great oscillations of level. The test absolutely fails when it is applied to the Forest-bed, and to the Pliocene and Miocene deposits of Europe. See *Early Man in Britain*, p. 142.

In this fauna most of the pliocene survivals in the forest-bed deposit are absent, and the Etruscan rhinoceros is represented by the leptorhine or small-nosed rhinoceros of Owen. The woolly rhinoceros, the companion of the mammoth, in its wanderings from Northern Siberia over Middle Europe, appears in Britain for the first time. It may also be remarked that the valley of the Lower Thames is the only place upon record where the three above-named species of rhinoceros are found together. The southern elephant (*Elephas meridionalis*) had either become extinct or had retreated southwards, probably into Italy. The Arctic mammalia are represented by the musk sheep, the most Arctic of all, but they were few in number.

There is clear proof of the presence of man at this time in the discovery, by Mr. Flaxman Spurrell, of a well-marked camping ground at Crayford,¹ in which there was a large accumulation of the splinters formed in the making of implements of the ordinary river-drift type. The presence of the river-drift man in the valley of the Thames at this time, in association with the same group of mammalia, has since been confirmed by the discovery of a very large series, representing nearly all the river-drift types of implements, by Mr. and Mrs. Stopes, in Milton Street Pit, Swanscombe, in the district between Crayford and Gravesend.

It must further be remarked that these ancient fluviatile deposits are generally covered by a confused, and folded, stratum of old surface *débris* (trail), which may be, as I have suggested, the result of hard frosts and melting snows, that accelerated the creep of the soil downwards. It is probably the result of a severe climate, and it may be the equivalent of one or other of the complicated glacial deposits in the region north of the Thames. Professor Sollas, in his last address to the Geological Society, has given a section of similar order,² in which river-drift implements occur in association with mammoth, horse, stag, urus, and reindeer, at Wolvercote, in Oxfordshire, underneath a folded and contorted gravel, which he takes to be the equivalent of the nearest layer of boulder clay. In neither case, however, is the precise relation to the boulder clays clearly established.

We shall deal later with the general question of the relation of man to the glacial period.

The Late Pleistocene Mammalia.

The last phase in the invasion of Britain by the pleistocene mammalia is characterised by the arrival of the northern group, and more especially of the reindeer, found in abundance in association with other groups in the river deposits and in the caves. Man also is represented by the river-drift and the cave man.

¹ One of these, broken in the making, was found and fitted into the block of flint from which it had been made, one-half having been found by Lord Avebury, and the other by myself at different times. This collection of flints is now in the British Museum, Natural History.

² *Quart. Journ. Geol. Soc.*, xxxvi, p. 544.

Late Pleistocene Mammalia in Britain.						River strata.	Ossiferous caverns.
Survivals from Early and Mid-Pleistocene — Living species = 24.							
River-drift man	...	...	...<i>Homo sapiens</i>	...	...	×	×
Cave man	...	...	...	...	...	—	×
Horse	...	...	...<i>Equus caballus</i> , L.	...	...	×	×
Brown's fallow-deer	...	...	...<i>Cervus Browni</i> , Dawk.	...	...	×	—
Roe	...	...	...<i>C. capreolus</i> , L.	...	...	×	×
Stag	...	...	...<i>C. elaphus</i> , L.	...	...	×	×
Urus	...	...	...<i>Bos primigenius</i> , Boj.	...	...	×	—
Bison	...	...	...<i>Bison europæus</i> , Gm.	...	...	×	×
Musk-sheep	...	...	...<i>Ovis moschatus</i> , Desm.	...	...	×	—
Hippopotamus	...	...	...<i>Hippopotamus amphibius</i> , L.	...	...	×	×
Wild boar	...	...	...<i>Sus scrofa</i> , L.	...	...	×	×
Wild cat	...	...	...<i>Felis catas</i> , L.	...	...	×	×
Lion	...	...	...<i>F. leo</i> , L.	...	...	×	×
Spotted hyæna	...	...	...<i>Hyæna crocuta</i> , Zim.	...	...	×	×
Wolf	...	...	...<i>Canis lupus</i> , L.	...	...	×	×
Fox	...	...	...<i>C. vulpes</i> , L.	...	...	×	×
Otter	...	...	...<i>Lutra vulgaris</i> , Erxl.	...	...	×	×
Brown bear	...	...	...<i>Ursus Arctos</i>	...	...	—	×
Grizzly bear	...	...	...<i>Ursus ferox</i> , Lew. and Cl.	...	...	×	×
Glutton	...	...	...<i>Gulo luscus</i> , L.	...	...	×	×
Water-vole	...	...	...<i>Arvicola amphibius</i> , L.	...	...	×	×
Red field-vole	...	...	...<i>A. glareolus</i> , Schreb.	...	...	×	×
Hare	...	...	...<i>Lepus timidus</i> , L.	...	...	×	×
Beaver	...	...	...<i>Castor fiber</i> , L.	...	...	×	×
Mouse	...	...	...<i>Mus musculus</i> , L.	...	...	×	×
Shrew	...	...	...<i>Sorex vulgaris</i> , L.	...	...	—	×
Man	...	...	...	...	...	×	×
Survivals from Early and Mid-Pleistocene — Extinct species = 7.							
Straight-tusked elephant	...	...	...<i>Elephas antiquus</i> , Falc.	...	...	×	×
Mammoth	...	...	...<i>E. primigenius</i> , Blum.	...	...	×	×
Woolly rhinoceros	...	...	...<i>Rhinoceros tichorhinus</i> , Cuv.	...	...	×	×
Small-nosed rhinoceros	...	...	...<i>R. leptorhinus</i> , Ow.	...	...	×	×
Irish elk	...	...	...<i>Megaceros hibernicus</i> , Ow.	...	...	×	×
Machairodus	...	...	...<i>Machairodus latidens</i> , Ow.	...	...	—	×
Cave-bear	...	...	...<i>Ursus spelæus</i> , Goldf.	...	...	—	×
New forms—Living species = 15.							
Antelope saiga	...	...	...<i>A. saiga</i> , Pal.	...	...	×	×
Reindeer	...	...	...<i>Cervus tarandus</i> , L.	...	...	—	×
Arctic fox	...	...	...<i>Canis lagopus</i> , L.	...	...	—	×
Badger	...	...	...<i>Meles taxus</i> , L.	...	...	—	×
Stoat	...	...	...<i>Mustela erminea</i> , L.	...	...	—	×
Weasel	...	...	...<i>M. putorius</i> , L.	...	...	—	×
Marten	...	...	...<i>M. martes</i> , L.	...	...	—	×
Caffer cat	...	...	...<i>Felis caffer</i> , Desm.	...	...	—	×
Leopard	...	...	...<i>F. pardus</i> , L.	...	...	—	×
Lynx	...	...	...<i>F. lynx</i> , Tem.	...	...	—	×
Short-tailed field-vole	...	...	...<i>Arvicola agrestis</i> , L.	...	...	—	×
Continental field-vole	...	...	...<i>A. arvalis</i> , L.	...	...	—	×
Russian vole	...	...	...<i>A. ratticeps</i> , Keys. u. Bl.	...	...	×	×
Pouched marmot	...	...	...<i>Spermophilus erythro genoides</i> , Falc.	...	...	×	×
Arctic lemming	...	...	...<i>Nyodes torquatus</i> , Desm.	...	...	×	×
Norwegian lemming	...	...	... „ <i>Norvegicus</i> , Desm.	...	...	×	×

The northern mammalia, as may be seen by the following table showing the range of the principal species in the river deposits and caves, are so closely associated with those already in possession of the land, that they were beyond a doubt living in the same district, at approximately the same time, and formed part of the same fauna. It is, however, not accepted by Professor James Geikie and other eminent geologists, who relegate the northern group to one or other of their glacial periods, and the warm and temperate groups to one of their interglacial ages, although the mixed character of the fauna was pointed out some thirty years ago. We will, therefore, reconsider the evidence in detail, so far as it relates to the species associated with palæolithic man.

Late Pleistocene Mammalia associated with Man in River Deposits and Caves.

	River Deposits.				Caves.				
	Fisherton, Salisbury.	Bedford.	Ipswich.	Wolvercote, Oxford.	Kent's Hole, Torquay.	Wookey Hole, Wells.	Pont New- ydd, Cefn.	Ty Newydd, St. Asaph.	Cresswell Caves.
River-drift man ...	×	×	×	×	×	—	×	×	×
Cave man ...	—	—	—	—	×	×	—	×	×
Brown bear ...	—	—	—	—	×	×	—	×	×
Grizzly bear ...	—	—	×	—	×	×	×	×	×
Cave bear ...	—	×	×	—	×	×	×	×	×
Glutton ...	—	—	—	—	—	—	—	—	×
Badger ...	—	—	—	—	×	—	—	×	×
Weasel ...	—	—	—	—	×	—	—	—	×
Pole cat ...	—	—	—	—	×	—	—	—	—
Marten ...	—	—	—	—	—	—	—	—	×
Otter ...	—	—	×	—	—	—	—	—	—
Fox ...	—	—	×	—	×	—	—	×	×
Arctic fox ...	—	—	—	—	—	—	—	—	×
Wolf ...	×	—	—	—	×	×	—	×	×
Spotted hyæna ...	—	—	—	—	×	×	×	×	×
Wild caffer cat ...	—	—	—	—	—	—	×	×	×
Leopard ...	—	—	—	—	—	—	×	×	×
Lynx ...	—	—	—	—	—	—	—	—	×
Lion ...	×	—	×	—	×	×	—	—	×
Sabre-toothed lion ...	—	—	—	—	×	—	—	—	×
Irish elk ...	—	—	×	—	×	×	—	×	×
Reindeer ...	×	×	×	—	×	×	—	×	×
Roe ...	×	—	—	—	—	×	—	×	×
Stag ...	—	—	—	×	×	—	—	×	×
Musk sheep ...	—	—	—	—	—	—	—	—	×
Urus ...	×	—	×	×	—	×	—	—	—
Bison ...	×	×	×	—	×	×	—	—	×
Hippopotamus ...	—	×	—	—	—	—	—	—	—
Wild boar ...	—	—	—	—	—	—	—	—	—
Horse ...	—	×	×	×	×	—	×	×	×
Leptorhine rhinoceros ...	—	—	—	—	×	×	×	×	×
Woolly rhinoceros ...	×	×	×	—	×	×	×	×	×
Straight-tusked elephant ...	—	×	—	—	×	×	—	×	×
Mammoth ...	—	—	×	×	×	×	—	—	—
Lemming ...	—	—	—	—	—	×	—	×	×
Hare ...	—	—	—	—	×	—	—	—	×
Alpine hare ...	—	—	—	—	×	—	—	—	—
Pouched marmot ...	×	—	—	—	×	—	—	—	—
Castor fiber ...	×	—	—	—	—	—	—	—	—

The Late Pleistocene Mammals associated with Man in Britain.

The mammalia are associated with human implements in the following localities, that have been selected out of a very large series.

The remains of the mammalia in the above list are so closely intermingled that there is no room for doubt that they were swept down by the same floods, and eaten by the wild beasts inhabiting the caves during the same series of seasons—spring, summer, autumn, winter. In the hyæna dens, for example, we find that the hyænas fed on the hippopotamus, the leptorhine rhinoceros, and the straight-tusked elephant, probably in the summer; and in the winter on the reindeer and the horse, and other animals of the temperate group.

Man is represented in the river deposits by implements of the various types assigned in France to the groups found at Chelles, St. Acheul, and the cave of Moustier. In this country these are so closely associated together, as may be seen from Sir John Evans' great work on Ancient Stone Implements, that there can be no reasonable doubt that they were used by the same tribes at the same time. This conclusion is confirmed by the discoveries made by Mr. Worthington Smith¹ in the valleys of the Lea and of the Thames, on camping grounds at Caddington, Stoke Newington, and elsewhere.

I turn now to the evidence of the caves.² In the above table the remains of river-drift man in the caves of Kent's Hole, near Torquay, Wookey Hole, near Wells, of Pont Newydd and Ty Newydd, near St. Asaph, and of Cresswell, leave no room for doubt that the animals hunted by man in those regions belong to the same fauna as that of the river deposits. The implements from the cave of Kent's Hole fall into two distinct series, the upper containing the remains of cave men along with the teeth and bones of the contemporary wild animals, and the lower mainly breccia with the rough river-drift implements in association with bones and teeth of bear and other animals. Nearly all the species identified by myself and Mr. W. A. Sanford were obtained from the upper horizon. Unfortunately we were unable to catalogue the vast collection of remains, and therefore cannot give the relative numbers of the animals captured by man and of the hyænas. This, however, I have done in the group of caves explored by Mr. Mello and myself at Cresswell,³ which had been used as dens by hyænas, and from time to time as shelters by the palæolithic hunters.

The numbers in the following table represent the distribution of the bones and

¹ *Man the Primeval Savage*, 8vo, 1894, London.

² Kent's Hole and Wookey Hole, Dawkins' *Cave Hunting*, 8vo, 1874, c. vii. The Pont Newydd cave, explored by Professor Hughes, *Quart. Journ. Geol. Soc.*, xxviii, p. 410. The Ty Newydd caves, Dr. Hicks and Mr. Davies, *Quart. Journ. Geol. Soc.*, xlii, p. 9, and xliii; Professor Hughes, *ib.*, xlv and xlv; the Rev. C. H. Pullen, *ib.*, liv, p. 121. The caves of Cae Gwyn, Ffynnm Beuno, and Ty Newydd form a network of caves, and are grouped together in the above table under the head of Ty Newydd.

³ Mello, *Quart. Journ. Geol. Soc.*, 1875, p. 679; Mello and Dawkins, *Quart. Journ. Geol. Soc.*, 1876, p. 240; 1877, p. 579; 1879, p. 724.

	Robin Hood.			Church Hole.			Mother Grundy's Parlour.				Pin Hole.	
	A. White sand.	B. Lower red clay and sand.	C. Cave earth and breccia.	A. White sand.	B. Lower red sand.	C. Cave earth and breccia.	A. White sand.	B. Lower red sand.	B. Red clay	C. Sandy cave- earth.	A. White sand.	B. Red sand.
River-drift man	—	8	x } 1032	—	23	x } 211	—	—	x	x	—	x
Cave man	—	—	x } 44	—	—	x } 34	—	—	—	x	—	—
Brown bear	—	x } 12	—	—	x } 22	x } 34	—	—	x	x	—	—
Grizzly bear	—	x } 12	—	—	x } 22	x } 34	—	—	—	—	—	—
Pole cat	—	—	—	—	—	—	—	—	—	—	—	—
Glutton	—	—	—	—	—	—	—	—	—	—	—	—
Fox	—	13	—	—	—	—	—	—	—	—	—	—
Arctic fox	—	—	112	—	2	17	—	—	x	—	—	—
Wolf	—	3	68	—	7	12	—	—	—	—	—	—
Spotted (cave) hyena	—	65	965	—	185	235	—	x	x	x	—	—
Sabre-toothed lion	—	1	1	—	—	—	—	—	—	—	—	—
Lion	—	1	3	—	1	—	—	—	—	—	—	—
Leopard	—	—	—	—	—	—	—	—	—	—	—	—
Irish elk	—	7	—	—	—	—	—	—	—	—	—	—
Reindeer	—	55	—	—	138	—	—	—	—	x	—	—
Bison	—	31	470	—	11	278	—	—	x	x	—	—
Urus	—	—	—	—	—	—	—	—	x	x	—	—
Horse	—	143	626	—	120	267	—	x	x	x	—	—
Woolly rhinoceros	—	33	439	—	101	252	—	x	x	x	—	—
Leptorhine rhinoceros	—	—	—	—	—	—	—	—	—	—	—	—
Mammoth	—	13	50	—	18	50	—	x	x	—	—	—
Wild boar	—	—	1	—	—	—	—	—	—	—	—	—
Hippopotamus	—	—	—	—	—	—	—	x	x	—	—	—
Hare	—	2	51	—	2	8	—	—	—	—	—	—

teeth of the various animals in the stratified deposits. I would call attention to the preponderance of the reindeer and horse over the bison and uri, and of the woolly rhinoceros over the mammoth—and more particularly to the difference between the group of animals in the Pin Hole, Robin Hood, and Church Hole caves, as compared with that of Mother Grundy's Parlour. Here the leptorhine rhinoceros and the hippopotamus occur in the lower strata, in association with the horse, bear, fox, and hyæna. The absence of implements in this horizon may be explained by the fact that this hyæna den was not then used as a shelter by the river-drift man, whose tools occur in the upper stratum, while the absence of the mammoth, woolly rhinoceros, and reindeer may imply that there was a group of mammals in this district earlier than that in which the above species were so conspicuous. It must, however, be noted that elsewhere, as for example in the Vale of Clwyd, the same two species—the hippopotamus and the leptorhine rhinoceros—were contemporary both with the reindeer and with the river-drift man. They also occur in like association in the river deposits of Britain. In France they are taken by M. Boule and other eminent observers to be interglacial, and to mark the earliest palæolithic stage, both in the caverns and river deposits. In Britain they are associated with the implements of the river-drift men in mid and late Pleistocene deposits, and do not occur along with the implements of cave men.

The mixture of species seen in the Cresswell caves is presented by almost every Pleistocene cave and river-drift deposit in middle and northern Europe, and is the result of the Pleistocene immigrants coming in from different quarters, and ultimately occupying the same area at approximately the same time, as I pointed out in 1872, under climatical and geographical conditions totally different from those of the present day.

The Migration of the Pleistocene Mammalia into Europe.

At the beginning of the Pleistocene age Britain formed part of the continent of Europe, and the Atlantic coast-line, now sunk 100 fathoms below the sea level, ranged far to the west of Ireland, as shown on the accompanying map (Fig. 2). Europe, too, was joined to northern Africa by the elevation of the Mediterranean area so as to make one bridge of land extending across the Straits of Gibraltar, another linking Italy with northern Africa by way of Sicily and Malta, and converting the Greek Isles into ranges of hills standing out from the plain that then ranged southwards and eastwards to join the mountain plateau of Asia Minor. The Mediterranean sea was divided into two land-locked basins like the Black Sea. and Africa, north of the Sahara, was practically continuous with southern Europe. There was then no barrier to migration from south to north, from northern Africa to the north of Scotland and the west of Ireland. Nor was there any barrier to the migration of animals into Europe from northern and eastern Asia. We shall deal with them group by group.

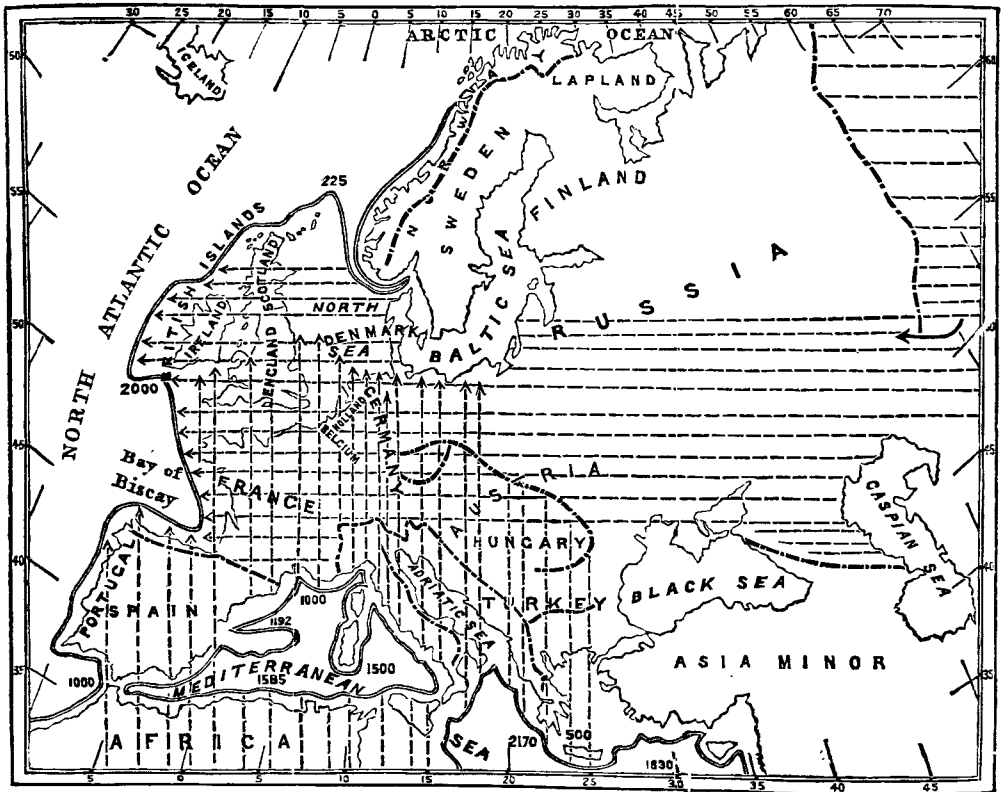


FIG. 2. MAP OF PLEISTOCENE EUROPE SHOWING THE RANGE OF NORTHERN AND SOUTHERN ANIMALS.

The double line represents the probable outline of the Pleistocene land.

The vertical broken lines show the range of the southern mammalia, and the horizontal ones that of the northern forms.

Living Species now restricted to the Temperate Zone.

The incoming Pleistocene species, now found only in the Temperate zones of Europe, Asia, and America, consist of animals of widely different habits and range. The more important of them are as follows:¹—

Musk shrew.	Marten.	Bison.
Pika.	Ermine.	Urus.
Pouched marmot.	Stoat.	Saiga antelope.
Hare.	Otter.	Stag.
Lynx.	Brown bear.	Roe.
Wild cat.	Grizzly bear.	Fallow deer.
Wolf.	Badger.	Wild boar.
Fox	Horse.	

The musk shrew, now living in the region of the Don and Volga, haunted the rivers of Norfolk, and the pouched marmot hibernated in Wiltshire and Somerset

¹ For full list, see *Early Man in Britain*, p. 98.

At the present time three species of pika, or tailless hare, inhabit Siberia. In the Pleistocene age the genus ranged as far to the west as Gibraltar, and is represented in Britain by the cave pika of Brixham and Kent's Hole. The Saiga antelope of the plains of the Volga and the Irtisch, south of latitude 55° , now ranging as far to the west as Poland, occur in the river deposits of London and the caves of the Dordogne. The fallow deer, now only indigenous in the warm temperate Mediterranean region, wandered as far north as Harwich, and is represented by a variety (*Cervus Browni*) found at Clacton. The bison, now living under the protection of the Tzar in Lithuania, and under feral conditions in the Urals and Caucasus, ranged over the whole of Europe, and as far to the north-west as North Wales. The bones and teeth found in northern Siberia and Eschscholtz Bay, and other localities in the northern regions of America, prove that in former times the herds were continuous with those that are now very nearly destroyed by the hunters in North America. The urus and the horse ranged over the whole of Pleistocene Europe. Among the incoming carnivores, the grizzly bear ranged from Britain and Ireland as far to the south-west as Gibraltar. At the present day both the brown and the grizzly bears inhabit the same regions in North America, and therefore there is no reason for surprise that they should be found together in Pleistocene Europe. The whole of this temperate group, in my opinion, invaded Europe from west-central Asia and Asia Minor.

Living Species of Northern Habit.

The second group of invading forms is presented by the following list of Arctic animals:—

Russian vole.	Musk sheep.
Norwegian lemming.	Reindeer.
Arctic lemming.	Arctic fox.
Alpine (= Irish, Scotch, Arctic) hare.	Glutton.

At the present time the four last named in the above list live side by side in circumpolar America, and the Arctic fox, the glutton or wolverine, and the reindeer range over the far north of Asia and Europe. The musk sheep is traced by its fossil and subfossil remains from its present habitat on the American shores of the Arctic Sea through Siberia into Europe, where it ranges as far to the south as the Alps and Pyrenees, and as far to the west as Bath in Somerset. The reindeer also ranged over middle Europe as far as the same southern limits, and as far to the west as Ireland.

We may also note that four other animals, the snowy vole, the Alpine marmot, the chamois, and the bouquetin, now only found in the colder regions of the European mountains, then occupied the lower grounds in France, Spain, and Italy, the marmot ranging as far down the valley of the Rhine as Belgium.

We may assume that the northern group of animals enumerated above could only have ranged as far south as the Alps and Pyrenees, in the Pleistocene age,

under conditions of life similar to those under which they live at the present time in a cold climate.

The Living Species now found in Warm Climates.

This conclusion has, however, to be reconciled with the evidence of the incoming animals now only to be found in the warmer regions of the earth.

Porcupine.	Spotted hyæna.
Lion.	Striped hyæna.
Leopard.	African elephant.
African lynx.	Hippopotamus.
Caffer cat.	

The porcupine of northern Africa and the Mediterranean region generally lived in the Pleistocene age as far to the north as Belgium. The leopard, common to Africa and the warmer regions of Asia, ranged through Europe as far north as Somersetshire, and through the Iberian peninsula and France into Saxony. It was associated in its wanderings northwards with the caffer cat, now living throughout Africa, and with the lynx of the Mediterranean region. The lion, now living only in the warm climates of Africa and southern Asia, followed its prey as far north as Yorkshire (Kirkdale) and as far to the north-east as Poland. The spotted hyæna of Africa, south of the Sahara desert, then abounded in southern and middle Europe, and in Britain as far as the Vale of Pickering. It also inhabited the caves of Ireland, and ranged as far to the north-east as the Altai Mountains. The striped hyæna of Africa and the warmer regions of Asia ranged over Pleistocene Europe as far as Provence, and the African elephant, now no longer met with north of the Sahara, passed northwards as far as Sicily, and into Spain as far as Madrid. The range of the whole group is represented by the vertical dotted lines in Fig. 2.

The Incoming Extinct Species.

The extinct species found along with man in Britain may be divided into similar groups. The mammoth and the woolly rhinoceros, found together in the frozen *tundras* of Northern Siberia, and ranging over Europe, the former as far as the Mediterranean, and the latter as far as the Alps and Pyrenees, are northern Asiatic forms, while the leptorhine rhinoceros, the Irish elk, and the cave bear probably belong to the temperate group. The megarhine rhinoceros, the only Pliocene extinct species associated with man in the mid-Pleistocene deposits of the Lower Thames, is, like the rest of the Pliocene species, of warm or warm temperate habit, ranging from Italy through France to Norfolk and Suffolk.

The Mixed Fauna caused by Climatical Changes.

If, with all these facts before us, we refer to the map, Fig. 2, it will be seen that there are three zones clearly defined in Europe:—(1) The northern, into

which no southern forms penetrated; (2) the middle, in which both northern and southern forms are intermingled, extending from the British Isles to the barriers of the Alps and Pyrenees; and (3) the southern, in which the northern forms are conspicuous by their absence. This distribution is obviously the result of climatical changes by which the northern animals were driven to their furthest limits to the south, and the southern animals were allowed to find their way to the north over the whole of the area ranging from Yorkshire to the Alps and Pyrenees. On the great continent extending from the Sahara, northwards, to the Atlantic (see Fig. 2), the climate was continental, and in the severe cold of winter the northern animals, reindeer and musk sheep, ranged southwards, and in the hot summers the southern group, hippopotami and the rest, migrated northwards over the same ground. In each season the frontier between the two moved north and south, as it now does in Asia and North America. In these two continents the debatable ground now is but a narrow zone, because the seasons have been on the average the same year after year. In Pleistocene Europe, besides this seasonal change, there were great secular oscillations of temperature marked by the glacial deposits of the north, and by the repeated advance and retreat of the glaciers of the mountain chains of middle Europe. The frontier between the two was shifted northwards and southwards over the whole of the region occupied by the mixed fauna, not in one season, but in a geological period of vast and unknown duration.

The mixture of the northern and southern forms described above is explained by Drs.¹ James Geikie, Croll, Wallace, and others, by the presence of the northern during a glacial, and of the southern during an interglacial period—these periods being separated from one another by æons, according to Dr. Croll,² of 10 to 12,000 years—and by the supposition that their remains have afterwards been mingled together. I am unable to find any evidence in support of this view. In the caves and in the river deposits there is the clearest proof that the two inhabited the same area at times, so closely approximate that they were eaten by the same packs of spotted hyænas, or swept down by the same succession of floods. The spotted hyæna, which Dr. James Geikie considers to be interglacial, preyed upon the reindeer, taken to be glacial in 28 out of 31 British caves that I have tabulated. In all these the teeth-marked bones and antlers leave no doubt that the kill was eaten at once, and not after the lapse of some thousands of years. When we find a similar mixture of northern and southern forms not only over the whole of Middle Europe, but also of Siberia, the theory that their occupation of a given area took place at times separated from one another by long intervals, to say nothing of glacial periods, appears to me to be untenable.³

¹ *Ice Age*, 2nd edit., p. 512.

² *Climate and Time*, p. 252.

³ Indeed, Dr. James Geikie (*op. cit.*, p. 523) gives his case away when he writes that “the northern temperate and southern mammalia, whose relics occur in the English valley gravels, belong to one and the same interglacial period—a period that could have lasted only a few thousand years.”

These groups invaded Europe and ultimately arrived in Britain from different areas, the southern first, and the northern afterwards, but they undoubtedly occupied the same districts in the same series of seasons, in a climate that was gradually passing from temperate to glacial, and from glacial to temperate, conditions. To my mind the winter and the summer in Pleistocene Europe was like that of Siberia and North America outside the Polar circle, and as there was no Arctic night, there was no summer and winter like that of the circumpolar regions.

This is not the place to enter into the glacial controversy¹ as to the interpretation of the boulder clays, sand, and gravels that occupy Northern Europe. It is sufficient for our purpose to accept the fact that they have been accumulated by melting ice, that at the period of maximum cold formed a great sheet over the British Isles north of a line passing through Bristol and London and extending due eastwards over the continent to the north of the continuation of that line through Germany into central Russia. The southern margin of this ice-sheet was continually advancing or retreating during the whole of the Pleistocene period. It began in the Pliocene age in the Scandinavian mountains, and was represented in Scotland by glaciers, according to Dr. James Geikie, as late as the Neolithic division of the prehistoric period. In the Alps it is represented by four periods of glaciation, named by Penck and Brückner the *gunz*, *mundel*, *riss*, and *wurm*, separated by three interglacial periods, and ranging from the Pliocene to the present day. Under these circumstances it is clear that the terms glacial and interglacial and post-glacial relate to climatical conditions in Europe both before and after the Pleistocene age. For my part, in classifying the Pleistocene mammalia in Britain some fifty years ago, considered up to that time by Professor Phillips and others pre-glacial, I used the term post-glacial in the sense that the animals in question, from their position in the river deposits, were later than the boulder clays of the districts in which they occur in south-eastern England. For the same group Dr. James Geikie uses the term interglacial, because at that time there were glaciers in Scotland, although it would follow that, if this principle be of general application, we are now living in an interglacial period, because the glaciers are still to be found on the mountains of Europe. Dr. Croll even goes so far as to assert that the carboniferous flora grew in an interglacial period. All the terms are in hopeless confusion, and in my opinion should only be used to represent local conditions.

The migration of the temperate and northern groups of animals into Pleistocene Europe was probably due to the lowering of the temperature in northern Siberia, by which they were driven from their feeding grounds in Asia, and compelled to move into Europe at the end of the Pliocene period, the temperate coming in first and

¹ I share the views of Professor Bonney in his address to the British Association at Sheffield, in 1910, with regard to the British Isles having been submerged in part as outlined by Sir Charles Lyell, in 1863, in his *Antiquity of Man*, and I am unable to accept the view of the extreme glacialists that the marine shells at high levels on the Pennine Chain, and on the hills of Wales, Ireland, and Scotland have been pushed up by glaciers from the bottom of the sea to heights of more than 1,000 feet above sea-level.

the northern afterwards; the former spreading over the whole of Pleistocene Europe, and the latter as far south as the Alps and Pyrenees. Both arrived in Britain before the ice-sheet covered Ireland, and before the valleys of Lancashire and Yorkshire were filled with glacial gravels and boulder clays.¹ The mammoth, horse, reindeer, and hyæna occur at Hessle,² near Hull, in pre-glacial deposits, and at Bielsbeck,² some few miles farther to the north, the reindeer and mammoth are associated with the Irish elk, urus, horse, wolf, lion, the straight-tusked elephant and the leptorhine rhinoceros, under similar pre-glacial conditions.

The southern group of mammals too, migrating northwards from the warmer regions of the south, ranged over Southern and Middle Europe, and the British Isles as far to the north as Kirkdale cave, Yorkshire, and as far to the west as Ireland in pre-glacial times, before the ice-sheet covered those regions. In proof of this I would mention the pre-glacial forest-bed of the eastern counties, the pre-glacial marine gravels of Sowerby,³ near Bridlington, yielding the remains

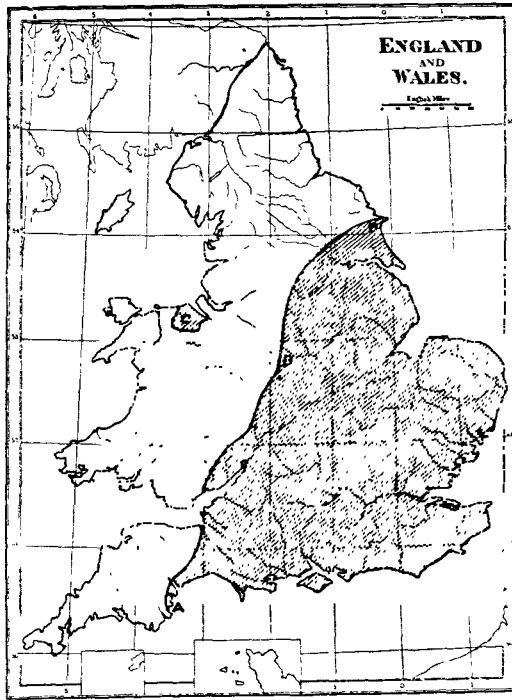


FIG. 3.—RANGE OF THE RIVER-DRIFT MAN IN BRITAIN.

¹ The boulder clays are the result of the melting of ice under conditions in which the materials in the ice have not been sorted by the action of currents of water, while the laminated clays and nine-tenths of the gravels are formed of glacial materials sorted and rearranged by marine and fluvial currents. They are so intimately mingled together in the glacial drift that in many cases, as, for example, in the docks at Salford, they were probably formed at the same time, as boulder clay at one spot, and sand and gravel at another.

² These are in the museums of York and Hull, and in various private collections. For the stratigraphy see Crofts, *Trans. Hull Geol. Soc.*, vi, part i, Stather, *ib.*, part 2.

³ For bibliography see Drake and Sheppard, *Proceeds. Yorks. Geol. Soc.*, xvii, part 1, 1909, p. 27.

of hyæna and hippopotamus along with mammoth, straight-tusked elephant, bison and urus, and the caves of Ireland with hyæna, mammoth, and others.

The Place of the River-drift Man in these Migrations.

With all these facts before us we are able to consider the place of man in these migrations, and to deal with his range in the Pleistocene age in relation to the mammalian groups. We shall take the river-drift man first.

The river-drift implements in Britain are found in the river deposits only of England, south and east of a line passing through Devonshire (see Fig. 3), the Bristol Channel, and along the western side of the lower valley of the Severn, and striking to the north-east from the Severn through the Midlands to the line of the Humber and Flamborough Head, in Yorkshire. To the south-east of this line, as may be seen from the geographical data in Sir John Evans' *Ancient Stone Implements*, they are abundant. I am indebted to Mr. Boynton for the most northern locality in which they have been found, at Huntow, near Bridlington, as well as for the figure (Fig. 4) of the implement that extends their range to the district north of the Humber. To the north and west of this line river-drift implements occur in the caves of Kent's Hole, A, of Fig. 3, and those of Cresswell, B and C, those of the district of St. Asaph in North Wales. Throughout this area river-drift man followed the seasonal migrations of the wild animals, ranging northwards and southwards. This is proved by the distribution of the implements made of the greensand chert of Dorset, and the Blackdown Hills northwards over the plains of Somerset to the Severn, and into Oxfordshire and beyond. To the north and west of this hunting ground the ice, or it may be the sea or glacial conditions generally formed a barrier, probably during the mid, and certainly in the late, divisions of the Pleistocene age (Fig. 3).

On the Continent the river-drift man is proved by his implements to have hunted over the whole of France, Spain, and Italy (Fig. 5). His range is extended to the south and the east by the discoveries made in 1875 in Algeria by Dr. Bleicher, and recently elsewhere by M. Boule, and by various implements found in Egypt and Asia Minor. River-drift man is also now proved by the officers of the Indian Survey to have ranged over nearly the whole of the Indian peninsula, and to have hunted the pleistocene animals of that region with the same implements and weapons as in Europe. From Europe to India, from Bridlington to the valley of the Nerbudda and to Madras is "a far cry." It must, however, be noted that the discovery of river-drift implements in Asia Minor and in Egypt probably indicate the general direction of the migration, although they have not as yet been found in association with the remains of pleistocene animals that would place their age beyond dispute.¹

¹ Implements more or less of river-drift type occur over a very large portion of Africa south of the Sahara from the falls of the Zambesi to Cape Colony. They are found in the surface soil and the sub-soil gravels, etc., and have not yet been discovered in association with pleistocene animals. The so-called palæoliths of North America are proved by their association

The impression left on my mind by this southern range of river-drift man is that he belongs—just as the cave hyæna and hippopotamus belong—to the southern group¹ of mammalia, and that he followed them from the south over Europe as far to the north as the British Isles (Fig. 5). He was probably represented by various tribes in various places, differing from one another like those of North America at the time of the Spanish conquest.

The low type of man found in a cave at Neanderthal, between Elberfeld and Düsseldorf, is proved by the discoveries in 1886 in the cave of Spy to have ranged from the valley of the Rhine to the province of Namur, and by the further discoveries in 1907 in the cave of La Buffia de la Chapelle-aux-Saints,² in Corrèze, as far to the south-west as the valley of the Dordogne, and by the re-examination by Dr. Keith of a skull found many years ago by Professor Busk to be represented in the caves of Gibraltar. It is defined by M. Boule as possessing pithecoïd characters, enormous superciliary ridges, great prognathism, by the occipital foramen being farther back, and by the height index (6·25) being lower than in any existing race. There is no chin. The skull is long, the cephalic index being 7·5. The tribes possessing these characters probably extended far beyond the area mentioned above, in the stage of the pleistocene defined by M. Boule as the Moustier stage of the mid-pleistocene. It is probable, in the absence of direct evidence, that the river-drift man in Britain belonged to the same primitive race.

The human remains described by Mr. E. T. Newton³ from the mid-pleistocene deposits of Galley Hill, near Northfleet, do not in my opinion throw light on the question. They may be of later date, and the deformation and condition generally of the skull prevents such accurate measurements⁴ being taken, as are necessary before the find can be used as a document in anthropology. "The characters," writes Mr. Newton . . . "are not such as will permit of any very definite conclusions being drawn as to the precise race to which they may have belonged."⁵ Both Sir John Evans and myself, in the debate on the paper, considered the age of the remains to be uncertain, and under these circumstances it is the safer course to put the discovery to "a suspense account." I know of no human remains in Britain that throw any light on the physique of the river-drift man.

It is obvious that a uniform state of culture, such as is presented by the river-drift man, does not necessarily imply a unity of race, and it is very unlikely that the tribes hunting in the tropical forests of India were the same as those that with implements of well-known Red Indian type to have been made by the ancestors of the Red Indians.

¹ Hitherto I have grouped river-drift man with the temperate group of invading forms. On reviewing the whole question, the evidence appears to me very strong in favour of his classification along with the southern group.

² *L'Anthropologie*, 1908, xix, p. 314.

³ *Quart. Journ. Geol. Soc.*, li, p. 505, pl. 16.

⁴ *Op. cit.* Out of six measurements taken of this fragmentary and distorted calvarium five are noted by Mr. Newton as doubtful. The sixth or circumferential is also no exception, because the length and breadth on which its accuracy depends are doubtful.

⁵ *Op. cit.*, p. 517.

followed the chase in Europe. It is more probable that it is the outcome of a primitive stage of savage life, from which mankind has emerged, and which may perhaps be represented by the implements of palæolithic type found throughout Africa, south of the Sahara desert, and as yet not proved to be of palæolithic age.

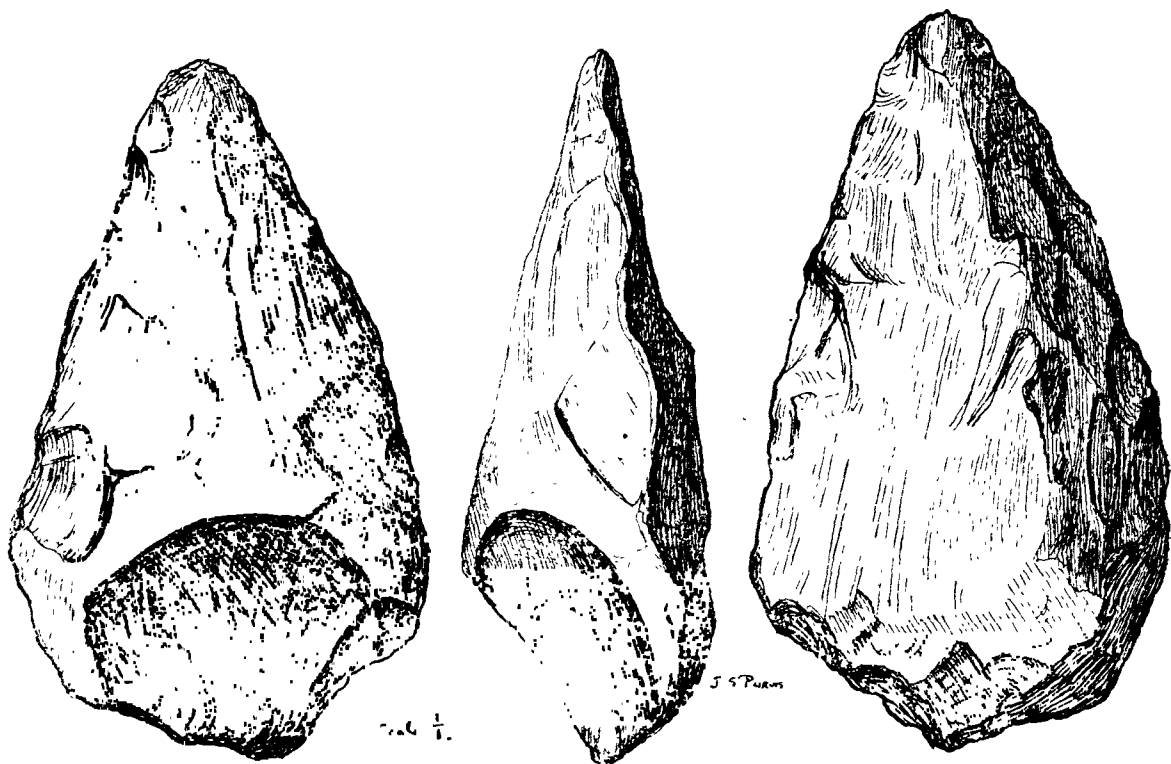


FIG. 4.—RIVER-DRIFT IMPLEMENT, HUNTOW, BRIDLINGTON (BOYNTON COLL.).

The Cave Man probably belongs to the Northern Group.

I pass now to the consideration of the cave men. In 1880 I pointed out that the examination of the caves and river deposits of Britain and Europe proved that the hunter stage of culture presented by the cave men was not only higher, but also later than that of the river-drift man. Are we to look upon this as the result of an evolution from the ruder implements and culture generally of the river-drift man? In my opinion this question must be answered in the affirmative. It is not, however, proved that this evolution took place in Europe, even in those areas where the sequence is clear. In France, for example, the various groups of implements may have been introduced by different tribes migrating at different times from other areas.

The range of the culture of the cave men presents a striking contrast to that of the river-drift men (Fig. 5). It is confined to the region north of the Alps and the Pyrenees, and is not found over Southern Europe and North Africa, where the conditions of life were easier. The cave man, with this higher culture, led the

same life, using the same implements in hunting the same animals—reindeer, musk sheep, woolly rhinoceros, etc.—over the whole of the pleistocene continent, from Yorkshire as far to the south-west as the Pyrenees, and over France, Germany, and Switzerland, as far to the east as Poland and Moravia.¹ In other words, he occupied the region in Central Europe which was that occupied by the northern group of animals. The only exception to this generalisation is presented by the cave of Altamira, near Santander, in the western continuation of the Pyrenees, where the food of the makers of the frescoes consisted not of reindeer, but of red deer and bison.²

All these considerations lead me to group the cave man with the northern mammalia, leaving the question of race to be settled by future discoveries. Unfortunately on this point the caves of Britain throw no light. Nor are we helped much, in solving this problem, by the caves of France. Even if we allow that the human remains in the cave of Cro Magnon belong to the “Aurignacean” stage of the French archæologists, and are not an interment of later date, and that consequently there was a tribe in Auvergne of tall men (5 feet 11 inches) with long head, well-developed forehead, and a chin, it does not follow that the same tribe inhabited the caves of Britain or of Germany. We may, however, note that this tribe is proved by Dr. Verneau and others to have ranged over Southern France as far as the caves of Mentone,³ and whatever opinion may be held as to the antiquity of their burials, there can be no doubt that the type of Cro Magnon is immeasurably higher in the scale than that of Neanderthal.

The Relation of the Cave Men to the Eskimo.

If the implements, weapons, and manner of life of the cave men are compared with those of living races, there is only one that can claim to be their representative, and possibly their successor—the Eskimo, inhabiting at the present time a narrow strip of the Arctic littoral, from Greenland as far as Behring Straits. In ancient times they inhabited also the north-eastern angle of Asia, and extended in America far to the south of their present limits. They live by fishing, fowling, and hunting, and use the implements of stone, bone, antler, and ivory that are practically identical with those used by the cave man in the south of France. This is true even to minute details. The stone lamp, for example, of the Eskimo,

¹ Dr. Martin Kriz, *Beiträge zur Kenntniss der Quartärzeit in Mähren*, 8vo, Steinitz, 1903.

² My reasons for putting this discovery to a suspense account are given in my work *Cavehunting*, 8vo, 1874, p. 249 *et seq.* The Paleolithic age is, however, very generally accepted by the leaders of anthropology on the Continent, and the skull is looked upon as a type of race.

³ The discoveries made in 1901 by the Prince of Monaco in these caves of Grimaldi have thrown a flood of light on the cave-dwellers in the district of Mentone. They prove among other things the existence of a negroid race in Europe, and that the earliest inhabitants of the district hunted the hippopotamus, *elephas antiquus*, and the rhinoceros *leptorhinus* of Owen. They are now in course of publication, and until this is completed they cannot be satisfactorily dealt with. For outline see *Congrès Int. d'Anthrop. et d'Archéolog. Préhist. Monaco*, 1906, pp. 111–161.

is represented by that found in the cave of Kostelik,¹ in Moravia, and by the smaller examples used to light up the frescoed caves of La Monthe in Central France, and Altamira, near Santander, in Northern Spain. The figures of the animals, either outlined or carved, or painted, are also of the same order, and indicate that the art was the same.

To the objection that savage tribes living under similar conditions might independently invent the same implements, and that therefore the identity of implements does not necessarily imply a connection between the users of them, the answer may be made that there are no peoples now on the earth that use the same *set* of tools without having been at some time in touch with one another. The ruder and simpler forms, such as flakes, borers, and scrapers, probably arose out of the environment, but when a whole set agrees, intended for various uses, and some of them rising above the common wants of savage life, the argument as to connection is, to my mind, of considerable weight.

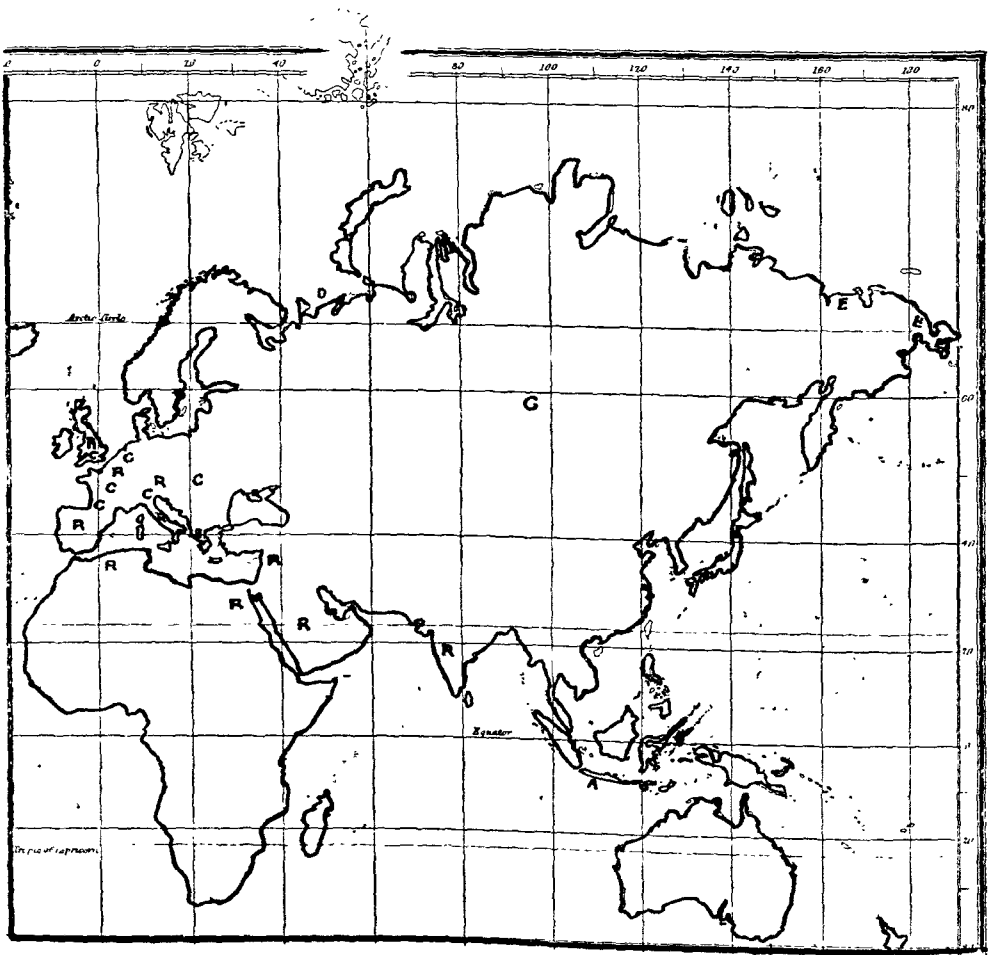


FIG. 5.—RANGE OF PALEOLITHIC MAN.

R. = River-drift man. C. = Caveman. E. = Eskimos.

¹ Dr. Kriz, *op. cit.*, p. 458.

The view that the culture of the Eskimo is derived from that of the cave men is considerably strengthened by the range of the animals hunted by the latter in Europe over vast regions in Northern Asia that separates them from the land of the Eskimo. The reindeer, the musk sheep, the marmots, the Arctic foxes, the grouse, and the snowy owls, used for food by the cave men in France, are still so used by the Eskimo, and the group of extinct animals hunted by the former in Europe is represented by fossil remains found throughout the region that divides the cave man of the Upper Danube from the Eskimo of Behring Straits. The mammoth and the woolly rhinoceros have been met with in vast numbers in the river deposits and in the caves in Central and Southern Russia in Europe, and throughout Siberia.

In the caves of the Altai Mountains¹ the same two animals are associated with the Irish elk, cave hyæna, brown bear, pouched marmot, beaver, Arctic hare, elk, stag, roe, bison, horse, and wild boar, and we do not lose sight of this group of animals even at Behring Straits. It is true that the woolly rhinoceros is not found in North America, but the group is represented by the animals discovered by Captains Beechey and Kellett in the frozen gravels forming the cliffs of Eschscholtz Bay, the elk, reindeer, the bison, the horse, and the mammoth. Then, the western portion of Arctic America, now occupied by the Eskimo, belonged to the same zoological province as Northern and Central Asia and Europe, and there were no barriers to prevent migration from the one to the other.

Nor are we without evidence that palæolithic man hunted the above group of animals in Siberia. In 1892 M. Savenkov described² a collection of implements found in the brick-earth of Krasnoïarsk, in the valley of the Yenisei, in association with the following animals: mammoth, woolly rhinoceros, horse, urus, bison, reindeer, and elk. They consist of stone implements of the type found at Moustier, made from fragments of the erratic blocks of the district, and of various articles made of bone, reindeer—antler and mammoth—ivory. M. Savenkov assigns this ancient camping ground to the end of the Palæolithic period, or in other words to the age of the reindeer. It is also proved by its position to be post-glacial, or after the ice had retreated from that portion of the valley of the Yenisei.

In all these facts I see cumulative evidence in favour of the view that the cave men have handed down their culture to the Eskimo by means of the post-glacial hunters in Northern Asia. I do not, however, think it proves an identity in race, as I thought in 1880.³ It may have been brought about by the contact of tribes of different race. On reviewing the whole evidence, it seems to me, that the physical relation of the cave men to the Eskimo is an open question, which cannot be definitely answered till we have more evidence than we now possess of the palæolithic hunters of Siberia, as well as more evidence from the caves of

¹ Brandt, *Mélanges Biologiques tirées du Bull. Acad. Imp. des Sc. de St. Petersbourg*, vii, 1870.

² *Congr. Int. d'Archéol. Préh. et d'Anthrop. Moscou*, 1892, t. 1, p. 121.

³ *Early Man in Britain*, c. vii.

Europe. As the case stands now the cave man belongs to the northern group of mammalia, and probably came into Europe with them from Asia and returned with them into Asia at the close of the Pleistocene period. I would further suggest that the regions of Asia north and west of the great mountain barrier, now the meeting place of temperate and southern forms, may have been the area in which the culture of the cave man was evolved from that of the river-drift man.

The Changes at the Close of the Pleistocene Period.

We must now pass to the consideration of the changes that took place at the close of the Pleistocene period. On the Continent generally there is no evidence of any great geographical change, and the retreat of the glaciers to the higher regions is the only evidence as to climate. The British area, up to that time part of the Continent, became depressed beneath the waters of the sea, and assumed almost its present insular shape, the North Sea and the Atlantic filling the lower grounds and ultimately joining at the Straits of Dover, and forming a barrier to the migration of the land animals from the Continent. The climate also became insular, and very much what it is to-day. Under these changed conditions of life it is no wonder that many of the pleistocene species became extinct, and that most of the northern and southern animals died out in Britain, leaving behind the present wild fauna, mainly of temperate species. At this time we lose sight of palæolithic man, who disappears without leaving behind any traces of his culture or equipment to his neolithic successor in the Prehistoric period. This is probably due to the great length of the interval between the Pleistocene and Prehistoric periods implied by the great geographical climatal and zoological changes above mentioned. It certainly has not been bridged over by any discoveries made in Britain.¹ On the Continent, the zoological break, although, as might be expected from the fact that there was no great geographical change, is not so strongly marked, is of the same general order, and in my belief only to be explained by changes in the fauna spread over a period sufficiently long to allow of the extinction, and disappearance from Europe, of the characteristic pleistocene species. It is something more than *une simple lacune de nos reconnaissances*, as M. Déchelette puts it, to be filled in by the "Azilien," a phase of transition from the Pleistocene to the Prehistoric period. This *phase de transition* appears to me to be based on very weak evidence, and to represent only a sequence of deposits ranging from the latest stage of the Pleistocene to the Neolithic age. The flat harpoons of stag's antler, considered by MM. Cartailhac and Boule to prove the transition in the caves of Reilhac² and Mas d'Azil, are found in the neolithic Swiss pile dwellings, Wawyl, and elsewhere. The barley also and the stones of the cultivated plum of the cave of Mas d'Azil are neolithic in

¹ For evidence of this see *Journ. Anthropol. Inst.*, 1894, p. 248 *et seq.*

² For further details and references as to these two caves see my address to the antiquarian section of the Roy. Archæol. Institute: "The Present Phase of Prehistoric Archæology," *The Archæol. Journ.*, December, 1897.

Switzerland, and can hardly be taken to prove that barley fields and plum orchards were in the south of France in pre-neolithic times. In both these caves I can only recognise two distinct civilisations, the newer or neolithic, characterised by the presence of domestic animals and cultivated plants, and the older or that of the cave men, the hunter of the reindeer. I am unable to see any signs of transition between the two, nor am I aware of any other discoveries that throw light on the question in any part of the world. The neolithic was undoubtedly evolved from the palæolithic civilisation in some quarter of the world, but there is no evidence that this took place in Europe, or that the present European peoples are the lineal descendants of those who ranged over Europe in the Pleistocene age. There is ample time in the vastness of the interval between the Pleistocene and Prehistoric periods for the appearance and disappearance of many successive races of mankind.

Conclusion.

In conclusion, I would add a few words on the antiquity of man—a burning question for the last sixty years. It is to be measured by the sequence of geological events, the changes in animal life and the advance of man in culture. It cannot be measured in years, because there are no chronometers in nature that register so small a unit of time. We get no help as to a date in terms of years, but only a general idea of the great length of time, from the study of the erosion of the land or the deposit of sediment in lakes, in river beds, and in the sea, or from the advance or retreat of glaciers. Outside history there is a simple sequence of events following one another in due order and with varying intervals, the length of which we do not know. These we are tempted to look upon very much in the same way as a child on a lofty mountain peak views the scene below, range after range, forest, river, and marsh succeeding one another, and apparently close together, although they are really wide apart. It is difficult to grasp the true perspective. Speaking for myself, the more minutely I examine the events that have taken place since man appeared on the earth, the more profoundly am I impressed with the vastness of his antiquity, and with the futility of any attempt to compute it in terms of years.

AN INVESTIGATION AS TO THE MOST ACCURATE METHOD OF ESTIMATING THE CUBIC CAPACITY OF THE LIVING HEAD, TOGETHER WITH SOME REMARKS ON THE RELATIVE THICKNESS OF THE CRANIAL INTEGUMENTS.

BY JOHN H. ANDERSON, M.B., Ch.B. (Melb.).

INTRODUCTION.

THE estimation of the cranial cubic capacity is a problem which has long interested anthropologists, and at a time when more accurate methods are being brought to bear on all craniological work, no excuse need be offered for again re-opening an interesting chapter in anthropometry. The dissecting room of an Anatomical Department affords certain facilities for the study of the question which are not available elsewhere. In such a place crania can be measured with the integuments *in situ*, the cubic capacity estimated from such measurements, and at a later date the actual capacity accurately determined by what may be called the displacement method, and thus an interesting and instructive comparison results.

OBJECTS OF THE INVESTIGATION.

The main object of this research is not to produce any new formula for the estimation of cubic capacity in the living, but to test the accuracy of existing formulæ, and to compare them not only one with another, but also with the actual cubic capacity as determined by the displacement method. Throughout this paper, estimated cubic capacity refers to the calculations obtained from the use of the formulæ selected, and actual cubic capacity is the result obtained by displacement. It is hoped by this comparison to be able to state which is the best formula for the estimation of the cubic capacity of a living head. Such a research has an added value in the hands of the advocate of no special formula, for when presenting one's own method a bias (unconscious though it be) must be present, which may materially affect the results.

A second and subsidiary object of the research is the estimation of the allowance to be made for the presence of integuments.

MATERIAL EMPLOYED.

The forty subjects used in this investigation were derived from the Metropolitan Hospitals and Benevolent Asylums of the city of Melbourne. Their ages ranged from 31 to 91 years, with an average of 69 years. To the type of subject

used a possible objection may be raised, inasmuch as Blakeman, Lee and Pearson (1) have laid it down that "the general hospital population belongs anthropometrically to a class intermediate between the class from which criminals are drawn and the lower middle classes"; and again, in the same communication, "the hospital population should not be used for drawing inferences, as to the type of the surrounding general population, without extreme care." Be this as it may, these remarks apply most closely to the weight of brain and its relation to physical characteristics with which this paper does not propose to deal. The question of age may also be commented on in passing, for Gladstone (2) remarks that "a sensible alteration of the scale occurs in old age, which is probably due to an atrophy of the hair follicles following the loss of hair." Proceeding, this writer concludes that "the diminution in length of the principal diameters attributable to atrophy, attendant on old age, amounts, if a mean of both sexes be taken, to .29 mm. in height, .81 mm. in length, and .885 in transverse diameter," but in any case most of these factors are so small as to be negligible.

MEASUREMENTS RECORDED.

The measurements recorded were as follows:—

1. Maximum length. (M.L.)
2. Maximum breadth. (M.B.)
3. Auriculo-bregmatic height. (A.H.)
4. Maximum horizontal circumference.
5. Nasio-inial arc.
6. Transverse arc.

The maximum length and the maximum breadth were measured in accordance with the instructions of the Monaco Commission.

The auriculo-bregmatic height—the "auricular height" of Duckworth (3)—is described by that author as "the distance separating the bregma from the inter-auricular line, *i.e.*, the line drawn from the centre of one auditory meatus to another." This differs slightly from the auriculo-bregmatic height of the Monaco Commission, for in their report the fixed point is not the centre of the meatus acusticus externus, but its superior border.

Duckworth's measurement has been employed throughout the present investigation and recorded with Cunningham's head spanner. When the integuments were *in situ*, the bregma was regarded as being "one inch behind the junction of the anterior and middle thirds of a line drawn from the nasion to theinion." Berry (4). The auricular height used by Pelletier (5) is the auriculo-bregmatic, but unfortunately Lee (6), in her splendid work in the *Philosophical Transactions of the Royal Society*, merely states that "H. is the height measured from the auricular line." However, in a later work by the same writer and Fawcett (7) we find the statement "that the auricular height of the skull . . . is the vertical height of the skull measured perpendicularly to the horizontal plane

in a line perpendicular to the auricular axis." This may be the "H." of Lee (6). However, Duckworth (3), after giving the definition of auricular height quoted above, goes on to speak of Lee's (6) auricular height as if it were the diameter described in his definition. Beddoe (8) also writes as if the ear heights of Pelletier and Lee were identical. Either the point escaped their notice or else they had information which the present writer has not been able to find. So it is impossible to say exactly what Lee's "height" is, but if it is not measured to the bregma, an injustice has been done her, a very small one certainly, in using her formula and not her exact measurements.

The maximum horizontal circumference and the nasio-inial arc require no explanation, whilst the transverse arc is described by Beddoe (8), as "running from the centre of the earhole across the bregma, if I can make sure of it, or in any case not far behind."

FORMULÆ UTILISED FOR THE ESTIMATION OF THE CUBIC CAPACITY.

For the estimation of the cubic capacity from the foregoing measurements three formulæ were selected to form the basis of the investigation:—

(1) Pelletier's method as modified for the living head, and set out by Beddoe (8):—

$$\text{c.c.} = \frac{(\text{M.L.} - 10) \times (\text{M.B.} - 10) \times (\text{E.H.} - 8)}{2020 \text{ (Males). } \quad 1940 \text{ (Females).}}$$

(2) Lee's (6) formula No. 14:—

$$\text{Males c.c.} = \cdot 000337 \times (l - 11) (b - 11) (h - 11) + 406 \cdot 01.$$

$$\text{Females c.c.} = \cdot 000400 \times (l - 11) (b - 11) (h - 11) + 206 \cdot 60.$$

The figures after the last decimal point in each of these two formulæ were omitted as they could not alter the result materially.

(3) Beddoe's (8) method:—

$$\text{c.c.} = \frac{\frac{1}{3} \text{ Circumference} \times \frac{1}{3} \text{ Nasio-inial arc} \times \frac{1}{3} \text{ Transverse arc.}}{2000} \\ + 3 \text{ per cent. for every unit of K.I. over 50.}$$

These three formulæ were chosen as being most applicable to the living head, for, as Beddoe (8) remarks, Lee and Pelletier's use of "the ear height instead of the basio-bregmatic would give a better foundation for calculating from the living head than would Manouvrier's or any of Welcker's, which use the basio-bregmatic height."

COMPARISON OF THE RELATIVE ADVANTAGES OF DIAMETRAL AND CIRCUMFERENTIAL MEASUREMENTS.

Having recorded on the undissected head the measurements required for the calculation of the various formulæ selected, the cranium was then removed from the trunk, the integuments and ears carefully dissected off, and the measurements

again recorded upon the skull itself. During the latter part of this procedure the positions of the bregma and inion were accurately located upon the skull, and their precise positions, as thus defined, compared with their positions as estimated prior to the removal of the integuments.

The bregma coincided very accurately with its estimated position, but with the inion, a very different state of affairs falls to be recorded.

Gladstone (2) writes: "In many individuals the external occipital protuberance, even when the muscles of the neck are thoroughly relaxed, is difficult to localise . . . so that in some subjects it is impossible to determine its exact position."

Lewenz and Pearson (9) also state "on the living head there is often doubt, and usually gravest doubt, as to where the inion should be located." They quote figures to support their assertion.

Schwalbe (11) also writes at great length in a similar strain.

My own experience, gained during the progress of the present research, and working both with integuments *in situ* and with the skull itself, upholds the opinion of previous investigators as to the very real difficulty of accurately locating the position of the inion in the living subject. In 10 cases, or 25 per cent., the inion with the integuments *in situ* was incorrectly located, notwithstanding that in every instance a most careful search was made before coming to a decision.

The inion was held to be incorrectly located if the nasio-inial arc, as measured on the skull, was greater than the measurement recorded with the integuments *in situ*. In six other cases, or 15 per cent., the difference between these two measurements was less than 10 mm., and a study of the thickness of the cranial tissues at once shows that there is here great doubt as to the correct localisation of the inion. It thus follows that in no less than 40 per cent. the inion, notwithstanding every care, was incorrectly located. This fact, therefore, constitutes a grave objection to the employment of any circumferential measurement on the living subject, which makes use of the inion as a fixed point.

Another complication in the use of circumferential measurements for the estimation of cubic capacity is the probable presence of hair, a fact to which Lewenz and Pearson (9) also draw attention.

In the present investigation but few opportunities were offered for studying this question; however, the evidence obtained from five of my cases shows that its presence has a decided effect on circumferential measurements, whereas on diametral measurements this is so small as to be negligible. The sex of the subject naturally influences this question very considerably, but the method employed by Beck (10) to overcome the difficulty, ingenious though it be, does not appear practicable. Apart from the two objections just raised to the employment of circumferential measurements for the estimation of cubic capacity, it is clear that such methods have not commanded the confidence of all investigators, as is shown by the fact that Lee (6) concludes, "as far as the present investigations go, circum-

ferential measurements do not possess great advantages" over the diametral measurements. Boas, quoted by Lee (6), on the contrary, comes to the conclusion that "circumferences are the most available means of judging cranial size."

The present work supports the Pearson-Lewenz-Lee school, and conclusively demonstrates the disadvantages of circumferential measurements.

The fact that in 40 per cent. of the cases examined, theinion, with the integuments *in situ*, was wrongly located, and that by a practised anatomist, seems quite sufficient to condemn all methods which employ it.

METHOD OF DETERMINING THE ACTUAL CRANIAL CUBIC CAPACITY BY THE DISPLACEMENT METHOD.

The opening of the skull and the determination of the cubic capacity by the displacement method were next proceeded with, and in connection therewith three questions at once present themselves for discussion:—

1. The method of opening the skull.
2. The measuring material to be used.
3. The mode of employing such material.

1. The first two skulls were opened by the usual post-mortem method employed in removal of the brain. After removal of the cranial contents, which were preserved for future research, the calvaria was replaced and held in position by bandages. The measuring material was introduced through the foramen occipitale magnum, but this procedure is not unattended by certain disadvantages, for it is slow, and if a heavy measuring material like shot be employed, and the skull has to be taken up and shaken, it is never certain that the bandage is properly fulfilling its purpose of keeping the two parts of the skull in accurate apposition. A third disadvantage is well illustrated by MacDonell (12), who says, "often when the skull seemed quite full a turn of the hand would cause the seed" (with which he was measuring) "to slip away into some unsuspected nook. Indeed, in some of the skulls, I doubt if I ever succeeded in quite filling the cerebellar fossæ."

Then, again, if a fluid medium be used, such as water, the question of bubbles and leaks is always present.

Taking all these points into consideration, it was deemed advisable to adopt some method in which the actual filling of the skull should be under the direct observation of the investigator. To do this the skull had to be treated as two parts, one comprising the basis cranii interna and the other the calvaria. It is hoped by this means to obviate such factors as air bubbles, leaks, and "unsuspected nooks," which latter might escape filling when approached through the foramen occipitale magnum. The difficulty was to remove the calvaria so that its edges would lie in a perfectly flat plane, which would thus enable accurate readings to be taken on each part separately. Had it not been requisite to preserve the brain the difficulty could easily have been met by the use of a containing box and a band saw. After several experiments with steel and lead bands, the following simple

plan was devised which gave very satisfactory results. The skull after being lightly dusted over with whiting was carefully lowered, vertex down, into a vessel of water. When the water attained the level required, that is, the line of Duckworth's (3) horizontal circumference, the skull was quickly withdrawn, and the level reached by the water accurately delineated with an ordinary dermatographic pencil. The calvaria was then removed by means of a saw along this line, and the line was found to correspond very nearly with the boundaries of the plane surface required. The brain and other cranial contents being removed, and the foramen occipitale magnum plugged, the skull was ready for measuring. It will be noticed that this procedure differs but slightly, but that in an important respect, from the method of Reichardt (29). Reichardt's ten observations were made upon the head while still attached to the trunk, and he obtained his horizontal level for the saw cut by means of the application of a steel band and colour marking. The cubic capacity is then obtained by a water reading, and provided the saw cut is horizontal and uniformly level throughout, Reichardt is thoroughly convinced of the accuracy of the method, in fact he devised methods for its proof.

With Reichardt's conclusion as to the accuracy of the method I find myself in agreement, but when the head can be removed from the cadaver, as in the present research, I am clearly of opinion that the use of whiting and water in the manner I have described is preferable to that of the steel band, inasmuch as it ensures a more accurate horizontal plane, with the possibility of fewer errors, and as I have employed both methods I feel I can speak, with some certainty, on the point.

2. Concerning the material to be employed for the estimation of the cubic capacity of the skull many substances have been used at various times by various observers. Topinard (13) expresses the following opinion, "all (substances) arrange themselves unequally according to the way in which the observer . . . manages matter"; and he quotes a table of experiments conducted by Wyman, who used various substances to measure the same skull. The materials employed and the results obtained thereby were as follows:—

Peas	...	...	...	...	...	1193	c.c.
Shot	...	...	...	...	...	1201·8	c.c.
Haricot beans	...	...	...	...	...	1206·2	c.c.
Rice	...	...	...	...	...	1220·2	c.c.
Linseed	...	...	...	...	...	1247·5	c.c.
Coarse sand	...	...	...	...	...	1257·5	c.c.
Fine sand	...	...	...	...	...	1313·0	c.c.

These figures are significant enough in themselves and require no comment.

Topinard (13), after carefully and fully describing Broca's method with shot, concludes that this process, "provided the instructions are rigidly carried out, gives the most uniform results."

It will be noticed that all the measuring materials employed by Wyman, as also those more recently suggested by Török (14) and Weinberg (33) are of a solid

character, and that the first-mentioned author makes no mention of fluids. These may, therefore, next be considered. That fluids cannot be used for the estimation of the cubic capacity of the macerated skull is sufficiently obvious on account of its numerous foramina, and Topinard's (13) remark that "fluids are out of the question" applies to such cases, as does also Hrdlička's (26) as to the complication of the water method. It was to meet the difficulties of the foramina that Poll employed an india-rubber bag to contain the fluid, a method which Török's (14) objections seem to have put out of court, whilst Weinberg (33) also sees no particular advantage in the method. In the present investigation the difficulty of the foramina did not exist, inasmuch as, on opening the skull, all the soft parts were *in situ*, and the various foramina perfectly and naturally occluded. Fluids were consequently the ideal media, and that for several reasons. They were easily handled, their density was constant, there was, as has just been shown, no possibility of leakage, the question of packing did not complicate the problem, and, as will be presently demonstrated, they gave the most accurate measurement of the cubic capacity.

Of the fluids which have chiefly been made use of by previous investigators mercury and water are the most important. Mercury is, however, open to the objections of great weight and expense—objections from which water is free—and consequently I have preferred the use of the latter throughout the present investigation.

From my recently obtained experience I am perfectly convinced that when the conditions permit of its use, as they did in the present investigation, water gives the most accurate reading of the cubic capacity of a skull, an opinion which is shared by Pfister (32). This notwithstanding, I made it a routine practice throughout the whole research to check the water readings by shot, with the dual object of ensuring accuracy and of testing the different modes of the employment of shot. Of the latter there are, as is well known, two distinct methods, Broca's, in which the shot is "rammed" into the skull, and Turner's, where it is merely shaken into position, inasmuch as he is of opinion that Broca's procedure gives too high readings: whilst Hrdlička (26) also says that Broca's method gives too high results. In connection with Broca's method, it must be remembered that the object aimed at is the attainment of "uniform results" in the hands of different observers. It does not, however, follow that the "most uniform results" are strictly accurate ones, for my own experience leads me to agree with Turner that Broca's method always gives too high a cubic capacity, at all events I always obtained a higher cubic capacity with Broca's shot method than with water; and, as has already been shown, I regard the water reading as the more truly accurate of the two. In support of this belief I may quote the following experiment, which I devised in order to test the accuracy of the water method as opposed to the various modes of using shot.

A measured and certified vessel of a known cubic capacity of 1,000 c.c. was employed for the test, and into it were poured first water and subsequently shot.

The latter was first poured in, next poured in and well shaken, and lastly, a third shot reading obtained by Broca's method of ramming. The results are interesting and instructive, and are as follow :—

1. Water, two readings	...	...	...	...	{ 999 c.c. 1001 c.c.
2. Shot poured in	...	...	...	...	970 c.c.
3. Shot poured in and well shaken	...	...	...	...	1020 c.c.
4. Shot "rammed in"	...	...	...	...	1030 c.c.

It will be noticed as the result of this experiment that the water readings are practically uniform, and that they coincide with the known capacity of the vessel ; whereas shot, on the other hand, gives readings which never coincide with that of the vessel, and which vary by 60 c.c. according to the method of its employment, while Broca's method gives readings at least 3 per cent. higher than the actual cubic capacity. This, therefore, more than justifies my belief in the accuracy of the water results throughout the present investigation.

3. Passing next to the mode of employing the measuring material, each part of the skull was carefully filled with water, and when the water was level with the edges it was quickly poured out into a vessel, and thence into a measuring glass and a reading taken. The first reading was disregarded on account of the influence of surface tension on the dry skull. The readings were persisted in until three consecutive ones were obtained within a range of 30 c.c. If it was noticed that the water in the skull sank with any appreciable rapidity a search was made to find the point of escape, and very frequently the foramen jugulare required plugging with cotton wool. The skull was then dried and a measurement with shot was taken.

COMPARISON OF THE ACTUAL AND ESTIMATED CUBIC CAPACITIES.

The actual cubic capacity of the skull having been determined by the most accurate of all methods, namely, the water reading, it now becomes necessary to compare such results with those previously estimated on the undissected head by the various formulæ selected for examination, the accuracy or otherwise of which it was the main object of the present investigation to determine.

In view of the work of Gladstone (2), Lewenz and Pearson (9), and Schwalbe (11), and the objections previously raised in this work against the circumferential methods of estimating the cubic capacity on the living subject, Beddow's method was rejected from the subsequent analyses. The results obtained by it are excellent in individual cases, but the liability to error is too great for its universal employment over a series of cases.

The rejection of Beddow's method therefore reduces the formulæ to two, namely, Pelletier's and Lee's. Comparing the cubic capacity as estimated by these formulæ on the undissected head, that is, under the conditions of the living subject, with the actual cubic capacity as determined by water displacement, I have ascertained that Pelletier's formula gives the more accurate result in 37·5 per cent. of cases, and Lee's formula in the remaining 62·5 per cent.

These results are set out in Table I.

If the crania of the present investigation be divided into microcephalic, mesocephalic, and megacephalic groups, it is seen that while both methods are equally accurate in the case of large and small skulls, Lee's method is in advance of its rival in the intermediate class. This point may be indicated as follows:—

—	—	Pelletier's the more accurate method.	Lee's the more accurate method.
Microcephalic. (Cubic capacity below 1350 c.c.)	8 cases.	3 cases.	5 cases.
Mesocephalic. (Cubic capacity between 1350 c.c. and 1450 c.c.)	15 cases.	3 cases.	12 cases.
Megacephalic. (Cubic capacity above 1450 c.c.)	17 cases.	9 cases.	8 cases.

According to this table Beddoe's (8) contention that Lee's formula does not advance with the increasing capacity of the skull is not upheld, and Lee's greater accuracy in the moderate-sized skull—that is, the class of skull which is perhaps most generally found in any living peoples—is well demonstrated.

In view of the possibility of errors from random sampling and the use of insufficient numbers, it would perhaps be unwise to draw too sweeping conclusions from the present series of but forty cases, but from the facts to hand Lee's (6) conclusion may be made that of this investigation, namely, "There appears at present to be no satisfactory determination of the skull capacity of Englishmen and women, and these results" (obtained by the formula used above) "are, I believe, as reliable as any estimates yet formed." Pelletier's formula is as accurate as Lee's when dealing with large or small skulls, but for general work Lee's is to be preferred.

THICKNESS OF THE CRANIAL TISSUES.

Text-books make but scanty reference to the thickness of the cranial integuments. Morris (15), Gray (16), Quain (17), Piersol (18), Cunningham (19), all merely state that the "thickness of the skin" varies from 5–4 mm., but do not refer in particular to the covering of the skull. Merkel (20) gives the average thickness of the tissues covering the skull as 5–6 mm. He also states that the relative thicknesses of the various layers in the parietal region of an adult male, aged 23, were 2 mm. for skin, 2·5 for the *Panniculus adiposus*, and 1·5 for the "*Galae*," but that these differ in different regions of the scalp.

Vierordt (21) quotes Merkel's figures, and also refers to Langerhans, who states the thickness of the scalp in the occipital region to be 6 mm., and 4 mm. in the region of the glabella. Poirier and Charpy (22) whilst giving very accurate figures for the thickness of the epidermis in all parts of the body, do not appear

to mention specially the thickness of the various layers of the scalp. The same remarks also apply to Bardeleben's (23) *Handbuch der Anatomie des Menschen*. Weekes, quoted by Lee (6), gives the following measurements for an average of thirteen males in middle life :—

Thickness of flesh at back of head	...	...	...	6·8 mm.
" " " " middle of forehead	...	...	...	4·3 "
" " " " top of crown	...	...	...	5·9 "

Gladstone (2) has collected data from 89 cases, 45 of which were male and 44 female. He divides them according to age, and those of his results which specially bear on the present investigation are as follows :—

27 males over 46 years of age :—

Height of head minus height of skull	...	...	...	3·79 mm.
Length " " " length " " "	...	...	...	7·25 "
Breadth,, " " breadth,, " "	...	...	...	7·40 "

27 females 46 years of age and over :—

Height of head minus height of skull	...	...	...	3·50 mm.
Length " " " length " " "	...	...	...	7·12 "
Breadth,, " " breadth,, " "	...	...	...	6·98 "

In the male and female Australian aboriginal heads, aged 25 and 50 years respectively, employed by Berry and Flashman (24) in their research on "The sectional anatomy of the Head and Brain of the Australian Aboriginal," I find the thickness of the cranial integuments to be as follows :—

Auriculo-bregmatic height of head minus auriculo-bregmatic height of skull	...	...	...	Male, 4·5 mm.
Auriculo-bregmatic height of head minus auriculo-bregmatic height of skull	...	...	...	Female, 5·2 mm.
Length of head minus length of skull	...	...	...	Male, 13 mm.
" " " " " " " "	...	...	...	Female, 11·5 mm.

In my own observations on the thickness of the cranial tissues made upon the forty heads of the present research, together with three others, I made use of the following formula for the estimation of the mean values of the thickness of the cranial integuments :—

Mean value = provisional mean + μ .

$$\text{where } \mu = \frac{\sum (n \cdot x)}{N}.$$

 " n = number of each dimension.

 " x = distance from mean of each dimension.

 " N = number of total observations.

9 females, average age 69.

Height of head minus height of skull ...	...	...	7	mm.
Length „ „ „ length „ „ „	...	...	8·12	„
Breadth „ „ „ breadth „ „ „	...	...	10·32	„

34 males, average age 69.

Height of head minus height of skull ...	...	...	7·21	mm.
Length „ „ „ length „ „ „	...	...	8·68	„
Breadth „ „ „ breadth „ „ „	...	...	10·55	„

Grouping all these results together in order to ascertain how much is to be allowed for cranial tissues, when measuring the living head, the following table is obtained :—

					Length.	Breadth.	Height.
					mm.	mm.	mm.
Merkel (20)	...	...	...	...	12·00	12·00	6·00
Vierordt (21)	...	...	...	...	10·00	—	—
Weekes, quoted by Lee (6)	Male	...			11·1	—	5·9
Lee (6)	...	...	...	...	11·00	11·00	11·00
Pelletier, quoted by Beddoe (8)...	...				10·00	10·00	8·00
Gladstone (2)	...	...	Male		7·25	7·40	3·79
			Female		7·12	6·98	3·40
Berry and Flashman (24)	{		Male		13·5	—	4·5
			Female		11·5	—	5·2
Anderson ...	...	...	Male		8·68	10·55	7·21
			Female		8·12	10·32	7·00

From this table it will be seen that the 11 mm. allowed by Lee for length and breadth is probably too much. From a study of these figures, which are the results of actual measurements made upon the dissected head, it would appear as though an allowance of 9 mm. in each case should suffice.

With regard to the height, Gladstone's figures differ widely from my own. My height measurements were taken from the centre of the meatus acusticus externus to the bregma, once with the ear and integuments *in situ*, and again on the macerated bone with both ear and integuments removed. As I am unaware of the method adopted by Gladstone for the ascertainment of the same dimension, it is not improbable that the marked difference in the figures may be due to differences in method rather than to those of the integuments themselves. It is interesting to note the greater thickness of the cranial tissues in the case of the Australian aboriginal, a racial difference which one would naturally expect to find, and one which, though of ethnological interest, does not affect the present work—

remarks which also apply to the recent works of Fischer (27) and Birkner (31), who have examined by Kollmann's method the relative thickness of the soft parts of the face in two Papuans and six Chinese respectively.

With regard to the allowance to be made for tissues in circumferential measurements, no figures are available to me in Melbourne. The following results, however, were obtained in the present research :—

9 females, average age 69 :—

Circumference of head minus circumference of skull ... 35·5 mm.

Transverse arc " " transverse arc " " ... 21·5 "

34 males, average age 69 :—

Circumference of head minus circumference of skull ... 32·6 mm.

Transverse arc " " transverse arc " " ... 19·56 "

Concerning the nasio-inial arc, reference has already been made to the difficulty of locating the inion, so the measurements cannot be given in full. Taking those cases only in which the inion was located with a fair degree of accuracy, that is, where the difference between the two measurements was more than 10 mm., the following results were obtained.

9 females :—

Nasio-inial arc of head minus nasio-inial arc of skull ... 19·88 mm.

18 males :—

Nasio-inial arc of head minus nasio-inial arc of skull ... 21 mm.

In arriving at the mean values of the circumferential measurements, it was distinctly noticeable that the range of variation was much greater than with the diametral measurements. This variation would constitute another objection to the determination of the cranial capacity in the living by the use of circumferential measurements.

CONCLUSIONS.

Bearing in mind the caution which has already been uttered concerning random sampling and the use of insufficient numbers, the following conclusions may be tentatively drawn :—

(1) Circumferential measurements for the estimation of cubic capacity on the living subject are less preferable than diametral measurements on account of—

- (a) The great difficulty in locating the inion.
- (b) The presence of a disturbing factor in the hair.
- (c) The great variability of the amount of the cranial tissue included in circumferential measurements.

(2) Of Pelletier's and Lee's diametral methods, Lee's formula No. 14 is the better, and is the one which should be employed for the estimation of cubic capacity on the living Caucasian head.

(3) The most accurate method for the actual determination of the cubic capacity of the skull is, when it can be employed, obtained by the use of water. In any case, the use of shot in the manner indicated by Broca always gives too high a reading.

(4) The correct allowance to be made for cranial tissues would appear to be for length 9 m., for breadth 9 m., and for height 7 m.

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References 28 and 30 were not available in Melbourne.

TABLE NO. 1.

Serial No.	Sex.	Cephalic Index.	Cubic Capacity.		
			Estimated.		Actual.
			Pelletier.	Lee.	
1	M.	78	1633	1418	1510
2	M.	78	1406	1379	1475
6	M.	82.2	1633	1483	1618
11	F.	76.4	1263	1396	1103
16	M.	78.8	1576	1440	1560
17	M.	73.7	1612	1462	1603
18	M.	77.5	1677	1506	1750
19	F.	79.8	1235	1125	1200
21	M.	81.5	1481	1376	1440
22	M.	78.7	1459	1520	1410
27	M.	77.8	1451	1356	1450
33	M.	79.3	1657	1460	1616
34	M.	81.7	1663	1497	1610
37	F.	80.5	1240	1131	1250
38	M.	77	1623	1406	1650
3	M.	76	1548	1421	1300
4	M.	81	1555	1426	1427
5	M.	79.4	1509	1455	1329
7	M.	74	1479	1393	1350
8	M.	75.6	1505	1393	1440
9	M.	82	1559	1425	1426
10	M.	77.3	1567	1430	1416
12	M.	84.5	1621	1486	1366
13	M.	83.5	1716	1605	1610
14	M.	85	1772	1572	1430
15	F.	78.3	1394	1338	1116
20	M.	81	1891	1623	1360
23	M.	77.8	1782	1671	1560
24	M.	78.6	1872	1629	1670
25	F.	78.6	1534	1453	1355
26	M.	83.4	1844	1647	1616
28	M.	75.4	1331	1222	1270
29	M.	76.1	1620	1469	1410
30	F.	78.7	1424	1267	1250
31	M.	79.8	1945	1686	1580
32	F.	75.8	1379	1227	1300
35	M.	80.7	1474	1372	1406
36	M.	79.3	1618	1469	1530
39	M.	77.5	1670	1523	1510
40	M.	81.9	1610	1461	1470

In the first 15 cases it will be noticed that Pelletier's formula gives the more accurate estimation while a better result is obtained by means of Lee's formula in the remaining 25 cases in the series.

THE PROPORTIONATE CONTENTS OF THE SKULL AS DEMONSTRATED FROM AN EXAMINATION OF FORTY CAUCASIAN CRANIA.

BY JOHN H. ANDERSON, M.B., Ch.B. (Melb.).

INTRODUCTION.

WHEN the large amount of research which has been devoted to the calculation of the cubic capacity of the cranium is considered, it seems strange that so few investigators have examined the proportionate contents of the skull, a question of the greatest importance in so many problems, including that most vexed point the correlation of size of head to intelligence. An opportunity of working out the relative proportions of brain, membrane and fluid in the skull recently presented itself to me, and it is with the results of this investigation that I now propose to deal.

MATERIAL.

The subjects, forty in number, were of Caucasian type, had an average age of sixty-nine, and were formalin preserved. They were derived from the Metropolitan Hospitals and Benevolent Asylums of the City of Melbourne. Such an origin constitutes, according to Blakeman, Lee and Pearson (1), an objection to the "drawing inferences as to the type of the surrounding general population without extreme care," but it need hardly be said that the class of subject supplied to an Anatomy Department permits of no choice, and that in any case the inferences to be drawn from the present investigation have been made with such care and with the above possible objection steadily borne in mind throughout.

TECHNIQUE.

After dissecting away the scalp, the skull was opened and the brain removed in accordance with the procedure laid down in a previous communication (2); the cubic capacity of the skull, with the dura mater *in situ*, was then determined with water. The volume of the brain was next measured, Reich's (3) mode of procedure being followed, though I was unable to procure his actual apparatus. The dura mater and sinuses were then carefully removed from the skull and their volume determined by means of water displacement.

The readings thus recorded were three in number, to which a fourth was added by calculation; these are as follows:—

1. The actual cubic capacity of the skull with the dura mater *in situ* obtained by the employment of water.
2. The volume of the brain determined by water displacement.

3. The volume of the dura mater also determined by water displacement.
4. If the volume of the brain be subtracted from the cubic capacity of the skull determined with the dura mater *in situ*, the result will give the amount of the space occupied by cerebro-spinal fluid.

The actual proportions occupied by brain, dura mater and fluid are set out in detail in Table I.

The causes of death were excluded from the table to avoid making it unwieldy. Blakeman, Lee and Pearson (1) state that when considering brain weight the cause of death is a "vital point," but they also add that males over forty-six years of age are exceptions, and as the majority of my cases are included in this category, the causes of death are but little considered.

DISCUSSION OF THE PROBLEMS CONCERNED.

The opinion has long been held, indeed it may be said to be a proved fact, that the brain weight diminishes with increasing age.

Marchand (4), who examined 1,234 cases, says the diminution of the brain weight appears clearly in the case of males after the seventieth year, but ten years earlier in females.

Bolk (5) places the commencement of the involution period between fifty and sixty years. Blakeman, Lee and Pearson (1), after studying a large number of cases, say "Human prime in brain weight seems to fall before twenty years, and after twenty years there is on the whole a continuous fall in brain weight."

Pearl (6) also writes in the same strain, and he considers that after the age of fifteen to twenty years there is a steady diminution in the weight of the brain.

In the face of such opinions I thought it unwise to attempt to arrive at a mean value for the various contents of the skull irrespective of age. If the brain weights vary in the manner described, it seems reasonable to assume that there is some corresponding variation in volume which would be expressed if the cases examined were divided up according to decades. The comparatively small number of my series of but forty cases makes this rather difficult, as some decades are not represented at all, but Table II comprises all the results available.

An inspection of the table for males shows that there is not the steady diminution with increasing age that might be expected. The decrease is noticeable from forty to eighty years with the one exception, where only one case was available. After eighty years the proportionate brain volume appears to increase. How much of this is due to random sampling and insufficiency of numbers, or how much is due to the gradual shrinkage of all physical attributes, including the skull, I am unable to say.

In the case of the females, the diminishing gradation is steady and almost regular, even though the number examined be much smaller. The disparity between the youngest and oldest female is very striking. The conclusion that I

form, therefore, from a careful study of this table is, that there is in all probability a steady decrease in brain volume with increasing age, but the limited number of the crania herein examined makes it impossible to speak with any degree of certainty. If there be indeed a progressive decrease in brain volume with advancing age it is impossible now, and always will be, to produce any figures which shall express the relative amount of cranial space occupied by the brain and which shall be uniformly applicable throughout the whole of life; any formulæ also devised for such a purpose must always take into consideration the more than probable decrease in brain volume with advancing age.

That such has not been done in the past is obvious from the following table, where the discrepancies in the relative proportions of a skull contents are almost certainly due to questions of varying age and diminishing brain volume coincident with same.

					Brain.	Other structures.
Manouvrier (quoted by Beddoe (7) )	...	...	...	...	87	13
Beddoe (7)	...	...	...	...	90	10
Davis (quoted by Topinard (8) )	...	...	...	...	85	15
Other observers (Topinard (8) )	...	...	...	...	87	13
Broca. Eight negroes (Topinard (8) )	...	...	...	...	80-92	8-20
Bolk (5). Children aged 15	...	...	...	...	93	7
After 80 years of age	...	...	...	...	86	14

The disparity between some of the figures would in all probability be capable of explanation if the ages were available.

So far the cranial contents have been divided into two parts, one comprising the brain and the other all the remaining structures.

Of the remaining structures, an analysis of Table I shows that the variation of the brain is not shared by the dura mater. This early arrested my attention, and has been a most noticeable point throughout the research. The brain varies considerably with increase of age, but the proportionate volume of the dura mater after the age of thirty remains approximately constant in every size of skull and at every age, and ranges from about 4·5 per cent. to about 5·5 per cent.

This singularly important observation does not, so far as I can ascertain from a careful study of the literature, appear previously to have arrested the attention of any observer, and it seems to me that in all future calculations as to the estimated cranial capacity of the skull due and proper allowance must be made for this remarkable constancy of the dura mater and its contained sinuses.

The space occupied by the cerebro-spinal fluid is obtained by calculation as already stated, and includes the various ventriculi of the brain, for when measuring the volume of the latter great care was always taken to ensure the

filling of these cavities by the water. A study of Table II shows that, unlike the dura mater, the percentage amount of fluid varies very considerably, and in this respect resembles the brain. It is also apparent that the fluid varies inversely with the brain volume, and it would appear as if the diminution of the brain volume is compensated by an increased amount of cerebro-spinal fluid.

It is thus, from the present research perfectly clear that, notwithstanding that the percentage proportion of dura mater remains remarkably constant in all sizes of skull and at all ages, those of the brain and fluid vary considerably in inverse ratio with different periods of life. I am therefore of opinion that in the estimation of skull contents due allowance can always be made for the relative proportions occupied by dura mater, but that for the cubic capacity of the brain the calculations to be allowed for age are a necessary and a complicating factor.

My conclusions may therefore be summarised as follows :—

1. The brain volume probably decreases with advancing age.
2. The variation in the volume of the brain is compensated by an inverse variation in the amount of cerebro-spinal fluid present.
3. The dura mater does not vary in proportionate volume with increasing age, nor with size of skull, but remains constant with a volume of from about 4·5 to 5·5 per cent.

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TABLE I.

No.	Sex.	Age.	Brain.	Dura Mater.	Fluid.
			%	%	%
1	M.	42	95.0	3.3	1.7
2	M.	85	90.0	5.2	4.8
3	M.	78	86.9	6.1	7.0
4	M.	81	91.7	5.5	2.8
5	M.	64	85.6	5.3	9.1
6	M.	64	89.3	4.9	5.8
7	M.	49	90.3	5.1	4.6
8	M.	89	86.1	5.2	8.7
9	M.	87	92.3	4.6	3.6
10	M.	75	84.5	5.6	9.9
11	F.	72	92.7	5.0	12.3
12	M.	65	92.5	4.4	3.1
13	M.	46	91.9	4.9	3.2
14	M.	77	88.2	4.8	7.6
15	F.	63	92.3	5.1	2.6
16	M.	67	89.1	4.5	6.4
17	M.	56	82.6	5.2	12.2
18	M.	83	82.8	4.2	13.0
19	F.	78	83.3	5.4	11.3
20	F.	68	87.3	5.8	6.9
21	M.	67	90.9	4.8	4.3
22	M.	72	85.8	4.9	9.3
23	M.	91	89.1	5.1	5.8
24	M.	72	92.0	4.6	3.4
25	F.	85	83.0	4.4	12.6
26	M.	64	84.8	4.9	10.3
27	M.	85	87.5	4.4	8.1
28	F.	79	78.7	5.5	15.8
29	M.	86	87.9	5.6	6.5
30	F.	74	92.0	4.7	3.3
31	M.	65	91.7	5.3	3.0
32	F.	77	88.5	4.2	7.3
33	M.	69	88.8	4.9	6.3
34	M.	42	87.5	4.3	8.2
35	M.	83	87.1	5.0	7.9
36	M.	79	90.1	4.5	5.4
37	F.	31	91.2	4.1	4.7
38	M.	71	75.7	4.8	19.5
39	M.	72	89.0	5.2	5.8
40	M.	71	88.3	4.7	7.0

The cause of death in almost every case was chronic disease.

TABLE II.

31 *Males.*

Age.	Cases.	Brain.	Mean value Membrane.	Fluid.
		%	%	%
40-50 ...	4	91.1	4.6	4.3
50-60 ...	1	82.6	5.2	12.2
60-70 ...	8	89.0	4.9	6.1
70-80 ...	9	86.8	4.9	8.2
80-90 ...	8	89.7	4.9	5.4
90 and over ...	1	89.1	5.1	5.8

9 *Females.*

30-40 ...	1	91.2	4.1	4.7
60-70 ...	2	86.2	5.4	8.4
70-80 ...	5	86.8	4.9	8.3
80-90 ...	1	83.0	4.4	12.6

NOTES ON SOME TRIBES OF BRITISH CENTRAL AFRICA.

BY H. S. STANNUS, M.B.

[WITH PLATES XXVI, XXVII.]

WITH reference to what follows, I deal with the inhabitants at the southern end of Lake Nyasa, more especially those near Fort Johnston.

This people is very mixed, the original inhabitants, "Anyanja," belonging to Nyanja stock, one of the many branches of the Bantu, were many times overrun by invading waves from the east, Amangoche, Ajawa (Yao), Machinga, Maraniga, and their territory at this point was also raided from the other side by the Angoni. Though the Machinga may be said to have settled here and be the ruling spirit, the people are more Anyanja than anything else, and their customs, etc., though suffering by being those of a conquered race, yet have survived in great part. Those people are often called the Nyasa, only meaning the dwellers near the Lake, but it is a good collective name now.

As far as possible these notes refer to Anyanja and their customs, and added matter and Yao elements have been eliminated; for this reason they will be found to differ in some ways from accounts given by others.

Of the average native one may say that his physique is very fair; given regular work and food, conditions such as exist on some of the boats, he develops into a very fine muscular man. A man will carry between fifty and sixty pounds 40 miles in one day, or a number of days in succession covering half that distance per diem. A man could cover 50 to 60 miles in twenty-four hours. He can travel the whole day without food, and would do three or four days' march unloaded without food provided he had water to drink.

Sensibility to pain is undoubtedly less than in the European, *i.e.*, the native can stand pain well if he be not afraid (*e.g.*, removal of sebaceous cyst without anæsthetic, extraction of teeth, etc.), the pain seems sometimes to be deferred, *i.e.*, in cases of tooth extraction appears to be perceptible a minute after the actual operation. An inflammatory condition seems to cause them intense agony, so that I would say they do not feel pain so acutely, but they do not bear it as well as a European.

I would make another contrast, in fighting against disease a native will often go under from sheer apathy, whereas the white man keeps going by his nervous energy. I have seen the reverse in the case of a carrier who went through an

acute lobar pneumonia, doing 15 to 20 miles a day simply because he would not be left behind among a strange tribe, though hospital accommodation could be provided for him.

They do not endure cold well. On visiting a hill station one's carriers will go down to the plain to sleep, if possible; with cold they look miserable and pinched, they behave foolishly and cannot work; with greater cold they lie down to die without much ado. This is due to the fact that the ordinary native has no subcutaneous adipose tissue and he is spare in every way. They can bear the direct rays of the sun in the ordinary way, but in their village life always seek shelter and remain at rest during the mid-day heat. Hats and umbrellas or the coast fashion turban is adopted and appreciated.

Natives notice that men have an odour; they distinguish between the odours of white and black men, but not between tribes, except that a Yao will say that he knows an Angoni, explaining that it is due to his washing less. A black man smells more when doing work and perspiring. A woman¹ smells more than a man, and a child not at all, as a rule. In these particulars I agree with the native's account, but would add that some natives, though of cleanly habits, certainly smell more than others, and to such a degree that one could not employ them in the house; a meat diet certainly causes an increase and a change in the odour of a native.

Mihani, a shrub, is used to rub over the hands to take away the smell of fish, and gives a scent like camphor.

The smell of human excrement and foul pus is very much disliked. A man on experiencing a disagreeable odour spits.

Fear is characterised by dropping of the jaw, eyes wide open, eyebrows partly raised, and a peculiar ashy colour, no doubt due to the paling of the skin; the hand often covers the mouth, and trembling is common.

In expectant pleasure the mouth is open, the eyes wide open, with some fulness of the lower lids. Inability to do anything asked is signified by shrugging forwards of the shoulders, the head being rotated by one of the sterno-mastoid muscles, that is, the occiput is rotated to one side and depressed, approximate to the shoulder; the mouth is open, the eyes transitorily closed. Affirmation is expressed by backward inclination or raising of the head and eyebrows, leaving the upper lids in position, causing the eyes thereby to close partly; the mouth is opened with a long expiratory "eech!" To emphasise that a thing was witnessed by themselves they point to their eyes.

Unwillingness to comply with a demand is expressed by shrugging of one shoulder, usually the left; this is most commonly seen in the women. The head

¹ They say of women that there are three classes: those that emit odour (*a*) before, (*b*) during, (*c*) after sexual intercourse, they possess greater sexual desire in the order *a*, *b*, *c*, the first two being more likely to become prostitutes. Those persons who perspire during coition are said to have no power.

may be sharply moved to one side and a short grunting sound through the nose with closed mouth is made.

Exclamation of denial with indignation is made by raising the eyebrows, opening the mouth, and uttering a high pitched "eh!" Emphasis to a denial is made by a movement of the hand across the throat [you may cut my throat if I lie]. When laughing tears may come into their eyes.

In dealing with expression of the emotions we find that their emotions are not quite parallel with those of white races, their psychology being different; thus astonishment is always associated either with pleasure or fear; open-mouthed pure surprise I have never seen—what might surprise a white man does not have the same effect on the native—it is something new to him and may be extraordinary, but it is caused by some particular "medicine" having been used—such a phenomenon might incite signs of pleasure or fear, or commonly a look of assumed indifference. I have never seen the mouth opened and the hands raised in astonishment.

Among the natives not in contact with Europeans, if not in all, shame, as we understand it, is not felt—remorse with perhaps a feeling of shame at having deceived so inefficiently may be expressed—giving rise to a sheepish expression. The eyes are cast down, the head bent, a blush may be seen; the mouth is often moved from side to side, the weight of the body is shifted from one foot to the other, and sometimes they paw the ground with their feet.

Disgust and contempt are well expressed, the upper lip slightly turned up, the head thrown back, the corners of the mouth depressed, the eyes partly closed. A disgusting smell excites expiration and spitting. Doggedness is recognised by a fixed expression, mouth tightly closed and upper eye-lids lowered.

With regard to attitudes, movements, etc., one may say of the native that he presents no awkwardness. The gait is neither energetic nor, on the other hand, slouching, but as a rule slow, head erect, body upright, knee slightly bent, the arms swinging by the sides when free, though it is seldom that one sees a native who is not carrying something with one hand or holding his cloth. The palm of the hand is usually directed inwards or backwards, the foot is planted on the ground firmly, the heel but slightly in advance of the rest of the sole of the foot.

The toes are commonly turned in, though usually the axis of the foot is directly antero-posterior; outward turning of the foot is rarely seen; on rough ground they retract or extend the toes to some degree to preserve them from injury.

In position of rest they sit with the knees partly drawn up towards the chin or squat sitting on their heels, the feet flat upon the ground; women commonly kneel or, with anything to lean against, sit with limbs extended.

In sleep they lie on one or other side, affirming that lying on the back gives rise to dreams. The wife lies facing the back of her husband, a baby lies at the mother's breast.

They seem to prefer the head slightly elevated, or rest the head on a wooden head-rest, or on the arms, or they affect a semi-prone position, the forehead resting on the forearm, knees bent. The head is always completely covered with the blanket or cloth.

In micturition the man usually squats, the woman kneels. In coitus the man is usually above the woman, though sometimes they lie on their sides facing each other.

The child is carried astride the back of its mother, held in position by a cloth or skin tied round them both; if carried free the child is usually astride the mother's hip, supported by her arm. A man carries a child sitting on his shoulders. Burdens are carried on the head, supported on a grass pad, sometimes on the shoulder, or in the case of a two-man burden, suspended from a pole carried on the shoulders or, occasionally, on the heads.

They are masters of the art of making up loads, and in the case of a number of articles tie them securely on to a pole to balance over the shoulder. To a single load is usually attached on each side a split bamboo, projecting several feet at one end: this affords a means of holding the load, and also when getting it into place on the head the load may be stood up on the projecting ends, a great convenience. Fowls are carried in an improvised basket made of bark.

They have very little direct control over facial muscles, and it is with very great difficulty that they can be made to move the mouth to one side—when opening the mouth wide they generally shut the eyes. I was never able to find a man who could move his ears or scalp voluntarily, nor a man who could close one eye independently of the other. The joints as a rule are supple, and extension of the fingers on the metacarpus is easy—they are able to extend the fingers without opening the hand. The first finger is used in pointing, sometimes the foot or head. The toes are used to pick up objects, but the great toe is not opposable.

Fighting.—Men fighting between themselves usually wrestle, the man down then receiving a blow on the head with a convenient stick. Two women fighting wrestle and sometimes use their fists. They bite and sometimes scratch, biting arms, face, and breasts. Fighting with a man a woman attempts to seize the penis and testicles, which she will jerk downwards with considerable effect.

ASTRONOMY.

Years are counted by "rains" up to three or four years; beyond that it is "some time ago" (= *kale*).

Lunar months are recognised "three moons ago . . ." A man will give the day of the month by pointing to the heavens and indicating the position of the moon at dawn. Pieces of wood threaded on a string are used to indicate the number of days of the month that have passed. The day is reckoned from sunset to sunset. The position of the sun in the heavens is used to give the time of day, and the latter is also reckoned by the length of shadow cast by a stick (= *Nthawe*).

Sunrise and sunset are known to vary in position north and south of the mean position, which is occupied twice a year. The sun and moon are supposed to make their return journeys through the sky hidden by it and clouds.

The morning star is observed. The Pleiades are recognised and called *Nsangwi*; when seen to rise early in the evening the season for hoeing has come. The Milky Way is known as *Koka nsiku* (=midnight); it becomes visible about midnight.

Shooting stars are supposed to be pieces broken off on collision between two stars. Thunderbolt=stone=*Mwala*. Eclipses of sun and moon have been seen and the sun and moon are then said to have been caught by a snake (= *Njoka*). Clouds are supposed to be smoke. Rain is not explained. All things are said to have been made by the unknown Power, *Chiuta*, not a man. North and south are named *mpoto*, *mvera* respectively, the names of the two tribes bounding the Anyanja people on the north and south. A short distance is expressed by *ankuka kawiri*="You will not smoke twice"; a longer by "You will not sleep twice," etc. Hot springs=*madziwila*. There is a story that Magomero once erupted, but they have no name for a volcano.

ENUMERATION.

The native counts on his fingers, ticking off the fingers of the left hand, first beginning at the little finger. 5 is the closed fist, thumb inside; 10, hands together. After 10 the toes are used, starting with the little toe of the right foot. To express 15, 10 is shown and then the right foot grasped with right hand. To reckon numbers above 20, stones, knots in string, notches in wood are used; 2 tens, 3 tens, and so on. The words for higher numbers are borrowed from other languages.

To add, the native counts on his fingers. 5 and 4=5, 6, 7, 8, 9=9. Subtraction is difficult. Multiplication and division not known.

Before calico was introduced into the country, skins, ivory, and bark for cloth, were used as barter materials.

A man slave was worth 50 yards calico.

A woman „ „ „ 40 „ „

A cow „ „ 15 goats=15-20 yards calico.

1 spear „ „ 1 fowl.

1 hoe „ „ 1 basket of maize.

Measurements corresponded to the length of nail, hand, foot, arm, from finger-tips to finger-tips (fathom), as in speaking of trees "so many double-arm lengths high." Cloth was measured from tip of middle finger to point of elbow, called a hand's length (= *dzanja*). Area is measured so many hands' lengths each way. Land is never measured; capacity is expressed in basketfuls, various known baskets being used. Beer is measured as "so many pots."

In expressing the height of a man, saying "he is so high," the hand is held upright, the tip of the fingers indicating height. Speaking of an animal the arm is

held horizontally, thumb up. Of inanimate objects, arm and hand parallel to ground, hand prone.

CRIMES. ETC.

Homicide is a criminal offence, whether there was good excuse or not, *i.e.*, whether murder or in self-defence. In the case of a man who has killed another, the uncle is called by the chief and told what payment he will have to make; that paid to the chief is known as "blood-money" (= *chemwasi*); a cow and a slave are first sent to the chief, then five or eight cows, then a piece of calico, then two yards of calico; these are passed on to the relations and a cow is returned to the chief.

Should the man possess no property he himself, his sister and mother might go as slaves to the deceased's uncle or brother. After compensation is paid, beer is made by the receiver of the "blood-money"; the man who has killed the other and his people are called to drink, and they then agree that the affair is closed and that they will be friends and not bear enmity.

Suicide is an offence. Several chiefs, however, have committed suicide rather than suffer at the hands of white men in the old days. A man maiming another has to pay blood-money to the chief and a cow to the injured man.

Rape was punished by drowning by the Lake people; the offender was bound, stones attached to him, and he was thrown into the lake.

A man inducing a woman to run away with him would go with her to another village, and if afraid of being taken back, they would go and break a pot over a grave and by that token become the slaves of the headman's brother.

A man seducing a virgin would have to pay the equivalent of £2, unless he marry her immediately.

Assault is compensated on a sliding scale, so long as blood is not shed the chief does not receive "blood-money."

Adultery was punished by drowning and shooting; if the wife of a chief was the culprit, the guilty pair were tied together *in coitu* and then thrown into the river, or a piece of bamboo might be put up urethra and vagina of man and woman respectively, the two bound together and left in the village open space to die. In other cases ears were cut off, testicles excised. Unnatural offences are unknown.

For arson the damages vary according to the damage; for theft cutting off of hands or ears was practised.

All cases were heard by chiefs and headmen. The headmen sit in a circle in the open space (*brulo*) of the village, usually under the shelter of a big tree. In some cases the chief hears the case, if it be one involving a headman. Ordinarily he remains in his house and the evidence is repeated to him and settlement made. The man bringing a charge salutes by clapping his hands, and sitting down makes his case; the accused then speaks, and witnesses on either side are then called. The accused is nearly always present. There is hardly any torture applied. In cases where they wanted a man to own to being *mphiti* two sticks were applied to the sides of the head and two strings uniting them tightened. In such a

case *mwari* might be administered ; if adjudged guilty the accused would be burned on a pile of wood.

Evidence is given without taking any oath ; a false witness is not punished.

Justice is occasionally summary. At Mponda's, after conviction of adultery with one of the chief's wives, a man's throat was cut on the spot. Drowning was the usual punishment with Mponda.

Punishments for all offences practically meant payment.

CUSTOMS, SALUTATIONS, ETC.

The correct salutation among Machinga Yao and Mañanja on meeting is clapping the hands, the hands in front of and at right angles to the body parallel to each other, thumbs against the fingers. The clapping should be continued for ten minutes after having passed ; after passing a chief it should be continued for half-an-hour.

Another form consists in slowly beating the breast with the right hand, the head slightly inclined forward. The lower in station makes salutation first to the higher, a man to a chief, a woman to a man ; exception is made in the case of an old woman, who is saluted by the man. Scattered all over the country a raising of one or both arms is a common form of salutation, but is probably only a corruption of the military salute.

Slapping of the nates or thigh with the right hand is also seen, among old men usually. In imploring mercy from, or on the first occasion of meeting, the chief, a man lies prone on the ground and catching the foot of the chief, puts it on his neck—a sign of absolute submission. Women kneel at the approach of a man. Words and expressions of salutation are few—*Moyo* (=heart) being the only old expression used. Now commonly one hears a word (sounding like *mōnē*) probably a corruption of good morning, and the Swahili greeting *Sukahri* with the double hand-shake of Mohammedans.

A man returned to his village after an absence rests awhile, then his wife comes to him and kneeling greets him, *moyo*, her husband returning *moyo*.

Years ago, a man of any importance was received with firing of guns and shouting. A headman is received now with *Ntungululu*, the women wobbling their tongues in their mouths. Ashes are put on the head as a sign of joy.

In the morning the husband and wife do not greet each other, but in the village friends "give each other good morning" (= *Moyo*). On waking in the morning, a woman cracks all her joints (= *Kulisu chala*). She then massages her husband and cracks the joints of his fingers.

One man wishing to see another goes to his house, and squatting outside the door cries "*Icho!*" three times (=there), at the same time clapping his hands. If no answer be given he goes away, even though he knows the man is within, no answer meaning that the inmate does not wish to be seen. If invited to enter he does so, the man of the house rises and gives him salutation. He makes small

talk for a little, and then sitting asks his visitor to be seated. *Natsale* (=remain seated, I must go) he says when rising to go; the man of the house rises and says *Napite!* (=you may go). If a man wishes to speak to a woman, the woman comes outside her hut.

Men and women never take their food together, a husband never sits and talks with his wife, the sexes congregate separately. A man taking his food in his hut is looked upon as greedy. Outside he invites anyone near to share with him.

Husband and wife sleep on the same bed, the former retiring first and lying on his left side, the woman lying on same side faces her husband's back. Old people sleep on separate mats, not together.

The wife or daughter looks after the old man past work, an old woman is cared for by her daughters and sons. Old people used to be put in small grass huts on the outskirts of the village, and allowed to starve. Old men are more or less respected and consulted by the younger.

A man about to take food invites anyone with him, relations or friends, to partake of it. In old days a friend visiting would be given the host's own house and the wife instructed to cook for him and look after his wants, no fear of any advantage being taken of the woman was entertained; now a separate cubicle in the same house is assigned to the visitor.

It is customary to remain one or two days on a visit. A stranger of the same tribe on arriving in a village goes to the headman and tells him his errand. He is then given over to a *capitão*, who finds him a house and food.

In going to defæcate old people go half-a-mile away from the village. A man catching sight of a chief at stool will run away lest any harm come to himself. A man must not defæcate or micturate near any woman, such would be very bad manners. In front of men it does not matter. Two women may do so in each other's presence.

Husband and wife never bathe together—in the house the wife may wash the husband, but if she would wash herself her husband leaves the house.

Coarse language in front of women and children is disapproved, but is more common now than formerly. In the same way there is greater license between the sexes. Drunkenness was always allowable among men, but now women and even children are permitted to indulge in excess. Certain words as they get vulgarised are considered bad form and others substituted, thus:—*Ku-panga Chigololo* (=adultery), is replaced by *Ku-fudza*; *Ku-Kodza* (=to make water) by *Ku-imilwa*; and *tu-tira msamu Ku-ma* (=to defæcate) by *Kupatuka* or *Kupaluka* (of a child); *machendi* (*pudenda*) by *masa*.

DISEASE, ETC.

As regards disease there is of course a very great difference in the point of view taken by a native and that taken by a European medical man. The native recognises a number of objective illnesses and has names for them—for a number

of subjective illnesses he has names, generally taken from the most prominent symptom. Thus in many cases he gives the same name to illnesses resulting from different causes in which some prominent symptom is common to both. In many cases, and in all which are fatal (excepting death from actual visible injury), the illness is ascribed to the workings of some person—he having compassed the death of his victim either by making medicine against him or actual administration of some noxious drug with the idea of eating the dead body, the evildoer being possessed or *mphiti* (*q.v.*)

Some special illnesses call for comment :—

Mauka (Scott's *Dictionary*)=rash breaking out in children. If a child sickens an old medicine woman is consulted. She asks to examine the mother—the vulva is examined and *Carunculae myrtiformes* sought (= *mauka*); these are said to be the cause of the illness in the child, and are therefore removed by the medicine woman with a sharp knife. If the child does not recover, the father goes to the medicine woman, who directs him to be examined by some man, who reports to the old woman whether *mauka* are present or not [they are found round the base of *corona* under prepuce]; these if present (*papillomata*) are removed by the man appointed—if none be present the medicine woman examines the man's mouth and the two papillæ under the tongue are accused of the trouble, and therefore removed by the old woman. These proceedings are called "going to *mauka*." One of the essential symptoms of *mauka* disease, I was told, is that the child becomes very pale.

Tsempo.—The disease from which a husband will die who eats food which his wife has seasoned and cooked if she has committed adultery before the making of medicine after the death of their child. This resembles *Ndaka*. The father and grandfathers, after the death of a child, may not sleep with their respective wives until after medicine has been made and administered to them and all the other children.

Kuku mamedwa.—Characterised by hæmaturia, with pain in back and over bladder, immediately after coitus with a woman who is menstruating. Men are said to have died from the affection—medicine usually produces a tardy cure.

Ndaka.—Suppose a man without a wife go to any house and take food (porridge) in which salt has been put by the woman preparing it; he may fall sick with *Ndaka*, symptoms being swelling of legs and sometimes of face. This is often fatal unless treated by the medicine man. Should a man pass close to a refuse-heap in which a fœtus (miscarriage or still-born child) has been buried, he may contract the same illness.

Seya.—Name given to a disease for which there is no medicine. Such diseases may get better, but should the person have sexual intercourse they will reappear; the nose is said to drop off.

Probably includes tertiary syphilitic lesions, tuberculous and malignant affections.

Kusipa.—Ulcers on arms. A man whom I saw said to be suffering from *kusipa* had syphilis, his wife a little later had ulceration of fauces, and was said to be sickening for *kusipa* caught from her husband.

Chipata.—Disease of external sexual organs.

„ *cha mwasi*=*chisonono*=disease due to coitus with a menstruating woman.

„ *cha mafinya*=*chindoko*=gonorrhoea.

„ *cha tonje*=in micturition a man is said to pass a lot of fine threads before the water appears, afterwards they go in again.

„ *cha chiswe*=(white ant).

„ *cha chepula*

„ *cha kuchela*=includes the last three above.

A man going away for some time and leaving his wife may put medicine at the door of the hut; the wife walking over it is said to have it rise up into her, so that should anyone commit adultery with her he will get *chipata*.

Chidima.—Blindness. Result of not washing the face in the blood of a man slain in warfare after cutting out his heart.

It is said in Central Angoniland that if the wind blow from the west for seven days then smallpox will come. There seems to be something in this, for such a wind would come over Portuguese territory, where variola is endemic.

Hydrocele, said to be caused by having connection with a woman two or three days after menstruation. *Mwera* (=south) was the name given on account of the belief that men so affected were made worse by going out in a south wind. The sac is said to contain frogs. If a boy makes a noise by knocking two crossed sticks together a man with hydrocele will tell him to stop as the noise resembles a frog's croaking and causes the frogs in the sac to move about.

Treatment of Disease.—Many illnesses among children are treated as follows:—A decoction is made by boiling the leaves of five or six trees in a pot of water, the child is held over this, and the child and pot covered with a cloth; it is in fact a form of medicated vapour bath. This is not repeated, but if the child has not recovered by the following day it is washed in a cold decoction made from leaves and roots; this may be continued for several days. These medicines are all prepared by the medicine woman, and if they are returned to her another woman is consulted. On the first day of treatment remuneration is at the rate of two

strings of beads; when the medicine woman is consulted and asked for medicine she demands beads that she may see clearly where the medicines grow—should no beads be forthcoming the woman may make pretence of finding herbs, but say that they hide themselves; the applicant will then come back with beads, when she will immediately see medicines plainly; no further payment is made till the child is well, when the old woman casts medicine at cross roads, the child's head is shaved and half a small basket of mealies is given as payment.

Methods of treatment may be divided into three groups:—

1. By administration of drugs internally.
2. By local application of drugs, mechanical means.
3. Medicine charms.

The giving of drugs by the mouth is but slightly used, certainly a number of astringent barks, etc., are given in diarrhoeal diseases, but how far with good effect I am unable to say. Emetics are known, but not commonly used. Purges apparently are not known, as they are drugs much appreciated by the native.

Aphrodisiacs are always in great request to rejuvenate the flagging energies of the twelve-wived headman of adult age. These are three commonly used: (a) *mbewe* bark, (b) *Mtutumuko* root, (c) *Ntuku* root; one tablespoonful of the powdered bark of the first named taken in beer produces its effect in half an hour, producing an erection at the sight of the first woman seen, the number of coitus possible in a night is increased from 1-3 to 3-7. If taken by a woman she becomes sterile. Coitus by use of drugs is reduced from 5-30 minutes to 2 minutes. Some taken by a friend of my own (a European) caused only increased vigour and rapidity of heart action. Medicine to bring on overdue menstruation is used, and an abortifacient is said to be known and of sure action.

Medicines.—*Pfundabwe* made of red earth and castor oil, and applied to an infant's fontanelle is a protection against the sun. Also used by a widowed husband before he may marry again.

Bleeding is stopped by sprinkling the strongly astringent powdered bark of the *mtumba* tree or leaves of the *chitimbe* tree; the bark of the *mfungati* tree is used on wounds.

A ligature is applied above the bite of a small snake, *mphiri*; the limb is said to drop off below the ligature. Sucking of wounds is adopted. Lime is sometimes put on fresh wounds. Burns are treated with ground-nut oil. The smoke of burning leaves is employed to relieve a cough. Dry cupping by means of small gourds, horns, etc., is practised.

A certain degree of precocity is apparent at least in young boys, and is noticeably lost when they arrive at the age of puberty, when sexual excess seems to reduce them to a state of, in many cases, semi-imbecility. From this they may recover, or on the other hand they may remain certainly not so bright as when they were boys.

CIRCUMCISION AND INITIATION CEREMONIES.

Circumcision was not practised among Anyanja. Among Amangoche, Machinga and Yao, the practice was known as *Inyago wa lupanda*.

Ku-umbala lupanda :—the prepuce was drawn forward and a nick made on the right side of the median line near the frenum. An application mixed with oil was applied. At the present time the Mohammedan practice is common *Ku-umbala jando* :—the prepuce is drawn forward through a split piece of bamboo and cut off with a sharp knife.

Circumcision is performed on boys usually at the age of nine to twelve years by a medicine man called *Ngaliba*, an honourable calling, in a hut at the Inyago camp. Both patient and operator stand, unless the former is young, when he sits. The ceremony is witnessed only by the boy's friend. Among Mohammedans clitoridectomy used to be performed by a woman operator (*nakanga*), but, it is said, was discontinued, on account of the heavy mortality, about seven years ago. At the time of the operation a woman was given medicine to make her vomit all unlawful things she might have eaten.

Initiation ceremonies (including circumcision) take place at irregular intervals. The chief or headman settles the date at which the Inyago shall be held, generally once a year in July, when there is no work and little else to do. Boys who are considered ready will then take part. The elder brother or a friend of a boy settles whether he is ready for circumcision. The mother then takes a present to the chief. The boys, their friends and the medicine man then depart for the bush, sometimes a couple of miles away from the village. The number may vary from three or four to as many as thirty or forty. In the bush grass huts (= *msasa*) are erected for their shelter. Food is brought by the mothers and deposited a little way from the camp, and the friends who have accompanied the boys fetch and carry and act as sentinels to prevent approach of any "outsiders." Six months used to be spent in the bush, now four to eight weeks only, and all the circumcision wounds must be healed by the time of the candidates' return. If a boy die, the mother is not informed, she is allowed to bring food each day; at the end when the return is made rejoicing she is told by one of the men.

The exit from the village is accompanied by the friends dancing *Tsanji* or *Maseve*, the boys in old calico (formerly always in bark cloth) walk and sit down on arrival at the place appointed. The circumcision is performed the following day; during the time which follows instruction is given them on their duties in after life as men, in good behaviour in their married life, *re coitus*, eating of food, superstitions regarding salt, etc. When this is all over a message is sent to the village, and the youths, walking quietly dressed in new cloths, are met half-way by the women and girls, who dance and sing; after the return to the village there is drinking and dancing, the newly initiated refraining for one day. At the present time the youth probably has some "friend" of the opposite sex with whom he sleeps; until he has had coitus he may not eat food into which salt has been put. His

mother is very careful about this in preparing his food lest he die in consequence. He henceforth bears his man's name, and it is an insult to use his child's name again.

Initiation of girls takes place in much the same way, instruction being given by the old women. After initiation most girls wear a string of big blue beads round the neck. In some cases, where it is not convenient to go far into the bush, a patch of bush near the village may be selected, the approaches are carefully guarded, and pieces of calico on bamboos are used as flags to mark the place.

Namwali ceremony witnessed at Kasanka's village (Awisa tribe) August 30th, 1907:—A girl about fourteen years of age, well developed. Among the Awisa the initiation ceremony takes place when the girl has reached puberty and is ready to be married. Four days are spent by the candidate in a small grass hut built in the middle of the *bwalo* (= village open space), when instruction is given her in all her future duties by a woman who is her "friend," in this case a woman of about twenty-six years of age.

About mid-day of the fourth day she was brought into the *bwalo* wearing old calico round the waist, and with two friends, one on either side, danced a kind of shuffling step backwards and forwards to the time of four drums; it was witnessed by the women of the village, who occasionally joined in the dance. After this she retired, and later in the afternoon reappeared with blue calico from waist as far as knees, white calico tied round waist as a sash, a rope of blue beads round neck and under arms. On the head she wore an erection made of flour and water with a

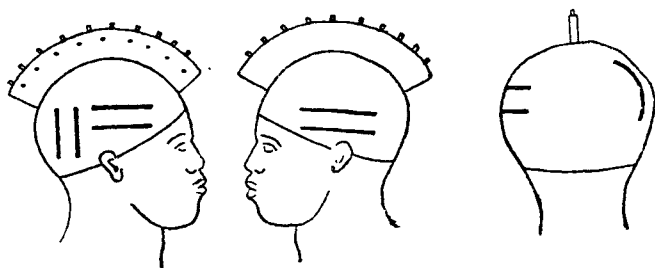


FIG. 1.

central crest into which were stuck little pieces of reed, lines of red were painted on the white ground as shown in sketch. Always supported by her "friend" or "sponsor," she again danced for a few minutes and then departed.

This night about twelve midnight *Zingan* was to be danced: all the evening and up till midnight a boy went round and round the village calling in a shrill voice warning none to approach. It was a very dark moonless night, and to the beating of seven drums (four small, two medium sized, one big) the *Zingan* came into the *bwalo*. One was an elephant 8 feet high with a man in each pair of legs—made of grass, trunk and tusks complete; the other, called an *Nswala* (a small antelope), resembled a dwarf jack-in-the-green more than anything else. The elephant pranced, the *Nswala* spun round and round; each was attended by a man with a

rattle who ran in front of it, and by whom the *Zingan* made appearance of being baffled. The performance was witnessed by a circle of women and a few men. When the moon gave evidence of rising the figures disappeared.

The following morning the girl was again brought to the *bwalo* about 11 a.m. and seated on a mat between her "friend" and her mother, while the women danced to the time of seven drums. Her head was anointed with water and shaved, the process was started by a woman and then finished by a man, apparently the village barber; the left side of the head was shaved first. The mother was shaved by a woman at the same time.

While this was going on, presents were being made—maize, beads, a chicken, tobacco, bracelets, etc. When the shaving was finished several women came and spoke to the girl, after which she was taken away for the bathing in the lake close at hand, returning about 1 p.m. in new blue calico from waist to knees with white sash, the body well oiled all over, to the time of one small drum played by an old man; then, supported on either side by two "friends," she waited a few moments while several women did a few shuffling steps, she then advanced alone and did a few steps. She then made a present of a chicken and tobacco to the drummer, and then to her father, kneeling to each. Again she danced alone, running to and fro

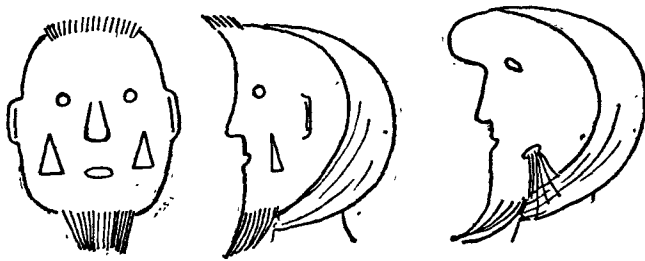


FIG. 2.

and spinning round quickly. During this time two masks, the *Sanchuna* and *Nkolola* (Fig. 2), appeared and mixed with crowd, danced about and made funny remarks; they went up to the girl and performed a kind of *danse-du-ventre*.

After thus dancing in the village she goes round to the houses of all her relatives, beginning at her father's house, and repeats the dance together with addition of a little *danse-du-ventre*, the masks (*Sanchuna* and *Nkolola*) go round with her, her immediate attendant being always her "friend." This night and the next day she spends in the house with her friend, the evening of the next day she goes to a separate house arranged for, and has to have coitus with a man who is asked to oblige; on emission taking place he has to withdraw in time, and the semen is collected on a cloth which has to be seen by the women. The following night she goes to the house of her betrothed to live with him; she has probably been betrothed since she was an infant.

About the *Sanchuna* and *Nkolola* I could learn nothing. These men wore masks with calico covering the back of the head and neck, a kilt made of strips of leopard skin and grass bound round their arms and legs.

MORALS.

The teaching of morals, of what constitutes right and wrong, is one of the chief features of the initiation ceremonies. A man must be brave in warfare; without fear rush into the middle of the battle. He must be just in hearing cases brought before him to settle. He must keep his wife in subjection (a man who is unable to beat his wife is looked down upon as a coward, as is also a man who would beat a child). Riches are always respected. Sexual power is not so much admired as one might expect. The only vice abhorred is apparently eating of the flesh of the dead (*Mphiti*). Adultery was the fault most severely punished in the olden days. Any crime was judged to have its equivalent in payment and was not condemned as bad in itself.

At the present time a man may make money by his daughter's vice, but society does not cast him out, though he is considered "a bad man."

Stealing from other tribes was of course approved; wives and slaves may be beaten, not children. A man visiting another village, if known, would be received as a brother; if unknown, he ran the risk of being there and then enslaved, even though of the same tribe.

Food is always shared by any acquaintance.

Lying is not considered wrong in itself, but the breaking of solemn oaths is condemned. Gluttony and over-drinking is not condemned. Neglect of the aged is common and hardly noticed.

General courtesy is inculcated, and many things are not considered "good manners." It is considered bad manners to touch the fire in another's house, also to take food from a basket which a woman is carrying on her head, or to uncover food she is carrying, or to uncover a cooking pot; it is said to be as great an insult to her as if her cloth were pulled off. If any of these things be done she would intimate that the offender has never been brought up, and ask him some question relative to instruction received at his initiation; should he be unable to answer he would be labelled a fool and ridiculed. Yawning, spitting, belching, etc., in company or in the presence of a superior, of a woman in front of her husband, of a man in front of his chief, is ill-mannered. Should a man in an assembly of headmen break wind a small boy will say he did it and receive a reward later.

RELIGION.

With regard to "soul" the original idea apparently was that all men at death yielded up their spirits, *mzimu* (p. 416, Scott's *Dictionary*), to the place whence they came, *Mlungu*. *Mlungu* seems rather to mean the spirit world, as it is never endowed with any form—of man, for instance; and it is quite impossible for the natives to have conceived an abstract Godhead. The word *mlungu* has latterly been used as a translation of the word God, used by various Christian denominations.

The *mzimu* is not tangible, and has no substance, but has the form of the man, and when set free from the body can talk and can do practically anything. The

mzimu may leave the body of a man asleep and appear as a dream to some other man, just as the spirit of a dead man may appear in a dream; spirits are not visible under other conditions.

The spirit is said to leave the body of a dying man before death at the time when he becomes unconscious or comatose. His shadow, which is part of the *mzimu*, leaves the body at the same time. The *mzimu* may appear to men at some distance away at the time of death of a man. The inanimate objects appearing in a dream are seen by the dreamer's *mzimu*, who is abroad among the objects seen.

The lower animals are said to have spirits, but these cease to exist with the death of the animal; a native will talk to a dog and believe it to understand him just as a white man.

I have once heard of a case in which a much beloved dog was buried with its master, but I was informed that its soul would not accompany that of the dead man, although the act would seem rather to contradict this.

To the dog is ascribed intelligence, and of the baboon they say that "it 'knows' a great deal."

Plants and inanimate objects are not considered to possess *mzimu*. The pigeons, etc., buried with the dead of course were for food; in the case of slaves buried they would accompany and attend to their master.

The spirits of the departed retain their former stations, thus the *mzimu* of a chief is a thing of greater account than that of an ordinary man. It is thought to continue to hold a directing influence on the well-being of the tribe. Before setting out to battle, before moving the village, and so on, offerings of beer and flour will be put on his grave and his intercession asked in respect of the coming event. The appearance of the spirit of some departed person generally means that it considers itself forgotten, and is the sign for putting flour on his grave "to keep him quiet."

The spirit of a murdered man may sometimes haunt the murderer, for this he takes medicine, but the *mzimu* is a good spirit and does no harm. The *mzimu* may visit anyone in his dreams; they often haunt burial grounds, they never enter into the bodies of others, and there is no transmigration to animals (see *Mphiti*).

The *mzimu* may visit the earth at any time, but their general residence is *Mlungu*, a phantasmal place above the sky. The *mzimu* when it leaves the dying body goes upwards. The only people to visit *Mlungu* and come back are occasionally children who die, for a short time their *mzimu* goes to *Mlungu* and returns; they live again, but are deaf-mutes.

There is no underworld, but a "bad man" is thought not to go to quite the same place as others; there is no idea of punishment or hell fire, however. The spirits in the spirit world are supposed to sit about doing nothing; they talk and see everything going on on the earth below. From what has been said before it seems that they suppose chiefs will remain chiefs in the spirit world. They do not appear to speculate about going to the spirit world, and as they do not think of any retribution to be dealt out it makes no difference to their conduct on this earth.

Evil spirits, named *masoka*, are said also to exist. "They are like *mzimu*, only come to do evil and can be seen in the day-time." Such spirits may possess a man and cause madness, *misala*; a man so possessed can be cured by drinking and washing in medicine. Again *masoka* may live in any big animal, but not in inanimate objects. Charms are worn against *masoka*, a custom taken by Mañanja from the Machinga. A case of insanity due to *masoka* after death yields up *mzimu*, not *masoka*.

There is really nothing in the nature of exorcism, spiritualistic séances, or mediums, neither fetishes nor idols. There is no nature worship and no nature spirits, save perhaps in a few cases, *Mpambe* (Chinyanja) or *Chinta* (Chipeta), the lizard-crocodile, who lives above (*Mlungu*) behind the clouds coming forth as lightning trying to kill men, making a noise (thunder) as he retreats again. In the absence thus of any definite religion there are of course no temples, priests, religious festivals, etc.

At Zambo, in Monkey Bay, Lake Nyasa, there is a rock with a cave in it where it is stated certain evil spirits (*masoka*) dwell; these come out with their children walking on the water to any passing canoe, and if gifts are not made to them the canoe is upset.

On the hills near Kachindamoto, on the south-west arm of Lake Nyasa, there is said to be a big flat stone on which are the footprints of man and all the animals which emerged from a hole in the stone. This is a story believed by the Chipeta and Mañanja.

Mlila is a name giving to a path (? hypothetical) which is used by spirits, and which never crosses a river. It runs from Chiromo *via* Mlanje, Zomba, Chikala Mangoche, Kwisimba, Msumba, round the north end of the Lake, keeping on the highlands back through Angoniland to Chiromo.

Mphiti.—If a man die, a relation commonly is accused of causing the death. Recourse is had secretly by the brother of the deceased to the *Wolondola* or *Munturwaula*, who by means of the *ula* answers questions put to him. He then tells the deceased's uncle, who calls in all the relations and informs them of the death having taken place, and from the chief asks that the accused may drink *mwavi*; this is done unknown to the accused man. Next morning, all the relations are called upon to drink *mwavi* by order of the chief, prepared by the medicine-man (*Muapondela*)—or it may be given to the accused only, he asking to be cleared.

The man who cannot vomit up the ordeal poison dies within half-an-hour, thereby confirming his guilt and showing that he was *mphiti*.

Some *mphiti* are not flesh-eaters, but the majority kill their victims that they may eat human flesh. The slayer, on the same day that his victim is buried, beats his little drum and lights a fire about thirty to forty yards from the grave at night that his brother *mphiti* may hear and see. It is said these cannot be seen or heard by ordinary men—but sometimes the natives say they have seen the fires of the *mphiti* at night.

The *mphiti* may be men, women, or children—fifty to sixty will congregate over the grave and call the dead man by his child-name; the body comes out of the grave, sometimes they dig, sometimes not—the raised man comes to life when he comes to the surface and looks round, but cannot talk. He is killed by being beaten with the tail of the *Zindi* (black-tailed gnu) filled with medicine—the flesh is divided up, filling as many as one hundred baskets, the man who killed having the feet to eat, the others any part. The bones are kept¹ sometimes. The grave is opened up and nothing left there. The *mphiti* are said often to take the form of animals, most commonly the hyæna.

WITCHCRAFT, ETC.

Mphiti.—A man wishing to cause the death of another, if a relation, will find a medicine-man and get him to make medicine which is placed under the door of the hut of the man whom it is wished to kill, or it may be that he simply states that the death of so and so is looked for, making certain signs. A man who is not a relation will be asked to come and drink beer, and in the beer which is given to drink is put medicine such as cannot be detected. The man may suspect that he has been poisoned and consult another medicine-man to give him an emetic, and I have heard it stated that men have been known then to vomit needles and pins which have grown out of the medicine. Finely-powdered glass, I believe, used to be given.

Cursing and evil-wishing are found in the expressions :—

Ukufa=may you die.

Ikulume njoka= may a snake bite you.

Ukuguira nkango=may a lion seize you.

Ugwena inidye=may you be eaten by a crocodile; may you drown; may you have nowhere to sleep.

Kafele kutali=go and die presently, etc.

They are believed in to a certain extent, and in some cases a man thus cursed will starve himself to death.

The hair, or the nail of the little finger, is cut while a man is asleep—this is fried with medicine—the victim is then invited to drink beer, the medicine-man pretends to drink and drops a little of the prepared medicine into the cup: the other then drinks and dies in two or three days.

Ku-lodza=to make medicine against a man, the medicine being kept by the maker. On the other hand, medicine may be placed at the victim's doorway, or it may be buried under a path along which he must pass—here it will have a selective action for the intended victim only, who dies soon after he has passed over it. Other magic medicine is that used by a thief, he presses on the ground outside the hut with the tail of the *Zindi* (black-tailed gnu) causing every one within to sleep; then

¹ Such a bone filled with medicine is used to perform tricks, and I was told by a native that he had seen a hut and its contents burnt, and come back in the hour complete—this was a trick.

the door is marked with medicine and it becomes unfastened; the occupants can then be asked by the thief where things are, they answer the questions in their sleep and never resist. My interpreter, one of a party of ten men sleeping in a hut, was thus robbed together with the others, not a stitch of clothing being left on them, and the door found open

In a case heard at Fort Johnston 23.11.07, a native was indicted with having threatened death to another man, whose wife he wanted to marry. He was said to have stated that he should take one of his medicines which would turn him into a lion, and as such he would kill his victim. His medicines consisted of *Chivalula*, a name given to any poison, made from pounded fruits and roots and kept in an iron phial, to kill people with; *Msengo* or *Lazemba*, a name given to medicine which is also kept in a small horn¹—this is the house-breaker's medicine, which when pressed against the victim's door causes him to become unconscious of anyone entering. This same man was stated to have given a man medicine for his wife one day who was sick—the following day she vomited a needle; the needle was preserved in a piece of grass stalk, and should the man wish his wife any ill he had only to place the stalk with the enclosed needle at the doorway of the hut and when she stepped over it the needle would once more enter her body and might kill her. To another man he had given instructions to make a small cut on the nates with a razor, and rub in some medicine whereby he would become a lion, or if a cut were made perpendicularly on the forehead, others on the neck and nates and medicine rubbed in, the man would thereby gain a knowledge of medicine and be able to kill people.

Ula.—The *ula* man or *muntu wa ula* is called on to cast lots in a great variety of circumstances—to find a murderer, to say whether such and such a journey will be good. His outfit may consist of the following:—

Tsapa or *ndumba*, a gourd, to which usually strings of beads and pieces of skin are attached; in it are contained the *mawali* or *mpingiri*, which consist of a great variety of articles such as short pieces of wood, some of them charred, the dried curled tendrils of some climbing plant, the body of a certain beetle, pieces of pottery, the tooth of a pig, etc. In casting lots, some one or more articles are made to jump from the gourd which has been shaken in the left hand, the right agitating the while a rattle (*msanji*). (Plate XXVII, Fig. 4.)

In the case of a man losing a brother and supposing him dead at someone's hands, he goes to the *ula* man, who asks him what he can do for him. The man first of all states a number of things he does not want to know about, such as "Someone has stolen my cattle," etc., each time the *Tsapa* is shaken and the *mawali* regarded, each time the *ula* man replying, "No, that is not what you have come about; but what is the matter is that your brother has been killed," and this he confirms by looking at the *mawali*. The man may ask why he was killed, the *ula* man

¹ Medicine made by extracting the fat from fæces by boiling in water mixed with charcoal and other substances preserved in the tail of a gnu.

suggesting that it was due to a quarrel some years before, and again consulting the *ula*, tells the man to go back to his village to see the man with whom the quarrel was.

He goes back and makes out his case as we have seen. A case I remember, in which a man accused of theft went to a native of my acquaintance, who gave him one medicine to bathe in, another to put under his tongue, and another to put between the great and second toes, this to make his accuser "speak little"; then by night he went to the *ula* man, asking him to cast lots to say whether he would be put in prison the following morning by the magistrate on the station.

A man wanting a good job will consult an *ula* man who possesses *mpasi*, a medicine made of charcoal and oil. He is cut on either side of the chest and the medicine rubbed in—other medicine is wrapped in paper and cloth and worn round the neck=(*Njeresi*); a woman would have two small cuts made above the pubis and two others in the small of the back, and the *njeresi* would be worn round the loins.

The *ula* man also has a tortoise suspended between two cross sticks—this is made to move along the ground by holding the two sticks; if the tortoise moves straight it is a good sign, *i.e.*, a journey would be well undertaken, or such and such a man would not have to go to prison. (Plate XXVI, Fig. 4.)

Two other forms of apparatus are used to answer yes or no, these consist of a gourd or small horn strung on a piece of string; the string is held vertically between the hand and foot, the gourd or horn brought to the top and allowed to slide down the string; if the fall be uninterrupted, all is well. By pulling the string taut the fall can be checked at any point, thus the result of the test depends entirely upon the operator. (Plate XXVII, Fig. 3.)

Gologolo.—The dried and partly mummified body of a squirrel containing the skull is also used as a sign. It is held by the tail and stroked downwards with the words "Speak, oh squirrel!" "Speak, oh squirrel!" It is then spat upon: if it fall to the left, it is negative; if to the right, a positive sign such and such a thing will happen. (Plate XXVI, Fig. 9.)

The *ula* man does not belong to any set or caste apart, but may be anyone, and may have any other occupation—he may have some knowledge of drugs, herbs, etc. The remuneration for advice given is a string of beads (about 1 foot long) or a fowl. He is commonly thought well of, and in consequence of his calling never comes to a bad end.

Magic=sleight of hand, *Tsinga*, is only practised by coast men. Casting lots to ascertain guilt is also called *Tsinga*. A man practising such things is called *Wa-tsinga*.

Trials by Ordeal.

a. Mravi.

b. Umba.—The *umba* man (*muntu wa umba*) puts a pin through the lobe of the ear of the man accused of stealing. Should blood appear and the man evince signs of pain he is guilty, and *vice versa*.

c. *Boiling water*.—In cases of theft used to be used.

d. *Kabrundula*.—In a case where a man accuses another of eating human flesh or sometimes simply of stealing. *Kabrundula* is called with his big horn (eland) filled with medicine; this horn is then given to anyone who holds it by the small end, the other end resting on the ground. It then starts to travel without being pushed to the place where the flesh or other goods are hidden, thus confirming the guilt of the accused.

Mwari ordeal.—(Among Nyanja.) The start is made early in the morning; the medicine-man, who has come to the village the night before, is ready with his little wooden mortar into which he chips the bark. A man and woman to stand by the mortar are picked out by the chief or headman, the men and women stand in line, a woman behind each man. If a chip flies out during the pounding towards the woman, women will die, and the converse.

Often the medicine-man himself pounds; he then sends two, three, or four people to fetch water which is poured into the mortar, then after walking round the crowd he dips out a small cup half-full, and gives to the man and the woman next him, who say, "If we are *mphuti* let this kill us; if not, may we vomit before the sun gets hot" (8 a.m.).

Then all drink, starting with the headman; each man drinks with a woman, generally man and wife. After they have drunk they sit down. Those who are going to vomit kneel up with their hands on the ground in front—those who are going to die, sit still and do not talk. They throw their heads from side to side, and fall backward with convulsions. There is no beating of drums and no special dress worn. Death takes place in 5 to 15 minutes—nothing is said by the medicine-man, who looks on, or else goes away immediately. Those dead of *mwari* are dragged outside the village and burnt together with any of their medicines. The medicine-man is paid with calico taken off the dead.

SUPERSTITIONS, ETC.

If a man sleep with a menstruating woman, or should menstruation start during the coitus, he will fall sick and die if no medicine is taken. A menstruating woman may not put salt into the food she cooks, otherwise those eating it will fall sick. This custom, I found, applies to the native-made salt (*chichere*), but not necessarily to salt bought from Europeans (*mehere*). During the pregnancy of his wife the husband will not commit adultery, otherwise she would die. In the event of the wife dying the husband is often accused of having committed adultery.

Love potions are given and taken.

Mkoteka: a woman takes a little *mapira* (millet) in grains and puts on the calico she wears as a diaper both during and without catamenia, till the grain is rotten;

this is then added to a brew of new beer and given to her husband to drink. He will then think of and love only herself. This is said to have caused the death of some husbands.

Mpasi: medicine made and drunk by a woman to make her beloved by a certain man.

At confinement a woman has to answer whether she has ever committed adultery; if she denies an adultery she may die, if she owns up and gives the name of the man this can be remedied. Adultery on the part of the father or mother is said to be a cause of abortion.

A man going away from his village for several months and leaving his wife behind and wishing her to remain faithful puts a knife into its sheath and hangs it in the hut, telling his brother. It is then believed that should anyone commit adultery with his wife separation after the coitus is impossible till some third party comes and pulls the knife from its sheath, and in doing so becomes a witness of the adultery.

Eating of eggs is believed to cause impotence in children or adults. Much fat eaten is said to have the same effect. It is believed that if a hare run up against the leg of a man while going through the forest he will become impotent. It is for this reason that dung of the hare is put at the door of a man to make fun of him as impotent. This is a trick played by *Adzukulu*.

If a woman who has committed adultery puts salt into the food while cooking, of which her husband will partake, will thereby cause his death. At the present time among the Yao-Mañanja community a woman always calls one of the children to do it—this speaks for itself. A woman, after connection with her husband, putting salt in food, may cause illness among any children partaking of the food.

If a man accuse his wife of adultery and she denies it, he will procure medicine and place it under her pillow, then in the middle of the night she will wake her husband and tell him the name of her lover.

Mpingu = ill omen. A journey would always be stopped if on setting out one of the party die; or should they meet an ant-eater or black snake. It used to be considered a sign of bad luck if one of them knocked the toes against a stone; now if blood flows from the big toe they say it presages good luck.

The Yao at the age of sixteen years climbs the *mtumba* tree, and finding a fruit which is soft makes a hole in the middle and inserts the penis. After this procedure the penis is said to enlarge as the fruit grows; when the size desired is reached the fruit is cut down.

The native says that every one has a small animal inside the ear, the sounds it makes causes the man to hear. If the animal escapes the man becomes deaf. The animal is said to be $\frac{1}{2}$ -inch long, and wax is said to be its excrement.

Where a man rests on a journey he often puts a stone in the fork of the nearest tree; on many journeys there are regular halting places, often at cross roads, and here every passer-by adds a stone for luck, making quite big heaps.

A man seeing a cloud coming up and wishing to prevent rain, ties a knot in the grass by the side of the path along which he is going.

In January, 1907, there was a drought in Fort Johnston district, so the chief Mponda and all his headmen visited a man called *Bimbi* (*bimbi* = prophet), a lesser chief, to ask for rain. They all adjourned to the forest, where *Bimbi* received them outside a hut, and having taken their presents, 50 yards of calico or less, he entered this hut and for a quarter of an hour went through certain incantations. He then appeared again and asked what was wanted. He was asked to give them rain. After again entering the hut and conferring with the spirits he announced rain for a certain day; this was received with clapping of hands, and then everyone lay down prone with the hands by the face and heads towards the hut. The spirits are said to be a male and female snake. God is said to speak to these, these to *Bimbi*, and *Bimbi* to the people. Rain did not fall on the day mentioned, but soon afterwards.

Chisimba: a man wishing to have medicine to make himself bullet-proof would be told to have coitus with his sister or mother. This is *chisimba*, after which medicine is given to him. A man known to have done this near Mponda's village was threatened with death by Mponda, and therefore fled.

Testicles of sheep, antelopes, etc., are eaten usually with medicine with the idea of gaining sexual power.

A chief eats alone to avoid being given poison.

A woman in child will not look at a picture or image lest the child be born with some deformity. Fright is said to cause monstrous births.

A woman, when she conceives for the first time, that is, when a newly married girl is pronounced to be *enceinte* by her mother, attends a dance, and her head is shaved in front as far back as the ears. She may not talk to any man except her husband for a month. In older times this restriction extended till the time she was confined.

A man used never to speak to his mother-in-law till after the birth of his first son. Neither a man nor his wife will eat in company of their mother or father-in-law until after birth of a child. If a man sees his mother-in-law eat he has insulted her and is expected to pay damages. If a man meets his mother-in-law coming along the road and does not recognise her, she will fall down on the ground as a sign, when he will run away. In the same way a father-in-law will signal to his daughter-in-law; the whole idea being that they are unworthy to be noticed till they have proved that they can beget children.

CLANS.

All Mañanja, Yao, Makololo, and Chikunda tribes are divided into clans, each with a separate name. Children take the clan-name of the mother, and members of the same clan are regarded as brothers and sisters; they are blood relations and may not intermarry.

Men of the same clan must help each other. Two men of different clans fighting will be joined each by men of his clan; such two men may be interfered with and stopped fighting by someone of the same clan, but not by others. A fight between men of different clans is a lasting thing, not so a quarrel in the clan.

Every clan has a (king) *Karonga* and a (prince) *Chilembwe*, who is his son. These grades are only found among the Nyanja peoples.

The *Karonga* may break bones when eating—this is significant of his power to break anything; the *Chilembwe* may not do so, being without land. Neither may eat while walking. These two are always chiefs.

Clan names.—In *Machila* men's songs one hears a number of clan names repeated sometimes.

After sneezing people sometimes exclaim, "*Mwana wa . . . ; Mdzukulu wa . . . ; Kubala kwa . . .*" (giving name of clan).

A man hearing another say this asks him, "Where do you come from?" He tells him, giving him names of his father and mother, etc.; if he does not know them he gives names of generations before.

The following are a few clan names:—

Achitolo, small rat.

Anamcula, rain.

Azimбири, puff-adder.

Achikalembo.

Achikalina.

Achingamina, thunder.

Achimaunde, cloud.

Anwali-ngosi, hartebeeste.

Ambiwi, pig.

Ang'oni, birds.

Achisombe, fish.

Achinasombe.

MARRIAGE.

A man seeing a girl he would like to marry deposes his brother to go to the brother of the girl, who then calls the girl's maternal uncle, and he speaks to the mother on the subject. The mother consults the girl; if she refuse, nothing further is done. If she consents, the man calls his relations to come and be witness of his taking the girl as his wife; they meet in the *Bwalo*. A house is assigned to the man in the village of the girl and there they go to live.

After six months the mother of the girl prepares beer. The uncles of the young couple, mothers, fathers, sisters, and brothers are invited. The girl's maternal uncle then speaks, addressing himself to the maternal uncle of the husband, saying, "We have called you here to drink beer and to see the house of your brother that you may return when you like. Should anything arise between these two newly married ones in the nature of a dispute, let them come to their respective uncles about the matter."

Then five pots of beer are drunk in the village, two are reserved for the witnesses to drink in the evening, and one for the two fathers and the headman.

There was no dowry and no giving of presents in the old days, the latter practice being an innovation of the last twenty years. The husband thus introduced (= *kuloola*) into his wife's village hoes the gardens of her parents.

No enquiry is made as to the potency of the husband by the wife's side, but his friends may ask him if his semen is good. A man who gets no children is *chembuwila*.

It used to be the custom when a marriage took place for the mother and father of the girl to cut a log about 15 feet long by 2 feet in diameter and send this by another daughter to the house of the married couple; this was put in the fire, and the unmarried daughter had to go every day and see that it was still burning. If it burned away before the married daughter became *enceinte* the husband might be sent away as useless. If the couple were much attached to each other the husband would buy a pair of goats and give them to the parents of his wife that the goats might produce young. Where sterility persists for three years the prohibitions against a man speaking to his mother-in-law, etc., are allowed to lapse.

After the first coitus the wife wipes up some of the semen on to a piece of white cloth; this in the morning is given for inspection by the girl's instructor, the woman who gave her advice on the occasion of her first menstruation.

The number of wives may be from one or two to six or ten for an ordinary man; for a chief, thirty or forty. A man may not marry any member of his wife's family, nor of the same clan name, nor two sisters, nor a deceased wife's sister. Marriage between people of different tribes did not take place till after the overrunning of one by the other, save in case of slaves and wives by capture. A rich man takes his wives to live with him in his own village, as does a chief. The first wife is the head wife, she does no cleaning nor cooking; a man may change his head wife, but must sleep equally with each wife, otherwise she may bring a case against him; each wife lives in a separate house, occasionally in a room of a large one. Slave wives corresponded to concubines. No polyandry.

At the present time marriage is regarded lightly, adultery is common, and divorce in consequence the same. In former days a man wishing to be rid of his wife ceased to visit her for one month, three months, or six months. Her uncle would then come to the husband and ask the meaning of his behaviour. He would explain that he no longer wished to live with the woman, and gave to the uncle an arrow (*mubvi*), calico so given may still be called *mubvi*; should the woman marry again she gives the arrow to her second husband. A man deserted by his wife, should there be children, makes a case to have custody of them.

As children, boys and girls play at being man and wife, building little houses in the bush and sleeping together; this is known as *masanje*. Promiscuous sexual intercourse among girls before puberty is common; in this way the vagina is usually dilated and no operation for so doing is performed. A virgin on her marriage is "broken" by a friend of the bridegroom before the latter cohabits with her. The friend is said "to eat new things"—*Kudia ujobvu*.

A boy having an emission in the night will take his soiled cloth to the headman of the village. He says, if the stain be black, that the boy must not marry as he will be impotent. A man who has no erection when evacuating the bowels thinks himself ill, and will seek medicine.

Menstruation usually commences from twelve to fourteen years, when the breasts develop and hair appears on the pubes. I am inclined to put it later than has commonly been stated.¹ The women dance, and instruction is given to the girl who has just arrived at puberty. The Yao no longer hold a dance. Menstruation is said to appear in those who grow fastest at a somewhat earlier age. It is said never to be deferred. Women state that they menstruate once every moon, the flow lasting from three to seven days; if for a longer time it is due to some sickness (menorrhagia is not uncommon). There is no purification after menstruation, but a wife sleeps apart from her husband, *i.e.*, on another bed, and she may not put salt into the food.

Boys, I should say, attain puberty at fourteen to fifteen years, when change in the voice takes place. The average age at marriage I should judge at seventeen and fifteen respectively in male and female. This of course only refers to first marriages, and when no hindrances occur. [Among the Angoni a man was not allowed to marry until thirty years of age, a woman twenty.] The child-bearing period lasts about twenty years.

It is believed that the child is formed only from what the man introduces into the woman—the semen. The average number of children in a family is three to five; out of every five, only three survive to adult age. The number of boys born is greater than the number of girls. Pregnancy in a woman is said to be known by the head woman, by her becoming paler. After pregnancy is detected, husband and wife live together, and coitus continues to take place, for some time; with some only for the first six weeks.

Labour takes place either in the woman's own house or in that of her mother. She is assisted by a midwife, generally an old woman (not her mother). The patient sits on the floor of the hut or an old mat naked, half reclining on the midwife, who kneels down behind her and presses her abdomen with both hands. No internal examination is made, and no assistance is given in cases of difficulty. The duration of labour is from one hour to five days, ending in death. Mortality from obstructed labour is high, in contradiction to the ease with which natives are usually said to give birth to children. The umbilical cord is not divided until after the birth of the placenta, and then close to its placental attachment; it is not tied. The whole length is bound to the abdomen of the child by some calico, separating about the seventh day; medicine is then applied to the umbilical scar, consisting of the charred root of a tree mixed with oil.

¹ It has been told me that menstruation used not to occur until the age of seventeen, but that of late years, on account of free sexual intercourse before puberty, it is earlier, and therefore the child-bearing age is earlier, sixteen instead of eighteen.

The placenta is buried in a refuse heap,¹ outside whence it is sometimes said to be stolen by *nphiti* (evil spirits) to make medicine. A caul is known, and now is said to be caused by the father continually wearing a hat. It is not kept for any purpose, as far as I know. If a woman die with the child unborn the child is cut out through the abdomen, when the body is in the grave, and the two bodies then buried together, the reason given being that if this is not done many other women would die in the same way. Cæsarian section is never performed; a still-born child is buried in the refuse heap; there is no treatment for still-birth.² Miscarriage is said to be common. Post-partum hæmorrhage is said to be one of the frequent causes of death.

After the confinement the whole body is washed, and then a piece of burning wood is placed between the legs of the woman and allowed to smoulder for several hours; this as a means of purification.

The woman stays in the house for a week. She does not resume sexual intercourse with her husband for two years unless she is the only wife, when six months to one year is allowed to elapse, though she cohabits after one or two weeks. During the puerperium there is no special diet. The child is suckled for two to three years by mother, or grandmother if the former die; or if neither are available, by the aunt (maternal). Death of the child may ensue as the result of being suckled by others. Suckling sometimes prolonged for four years, belief holding that thereby pregnancy is prevented.

After miscarriage the woman remains in the house only two days, but has to take medicine for six months, abstaining from sexual intercourse for half that period. Medicine is frequently taken to cause abortion, and may be made by one person to affect another; it is taken when a period is missed. Sterility is said to be common among women. No artificial sterility is produced, but medicine is taken and a cord run round the loins to prevent pregnancy supervening. The new-born child is first washed in ordinary water and then in the water in which a man and his wife have washed after coitus. After this the other women may touch the baby, but not young girls, otherwise it might die. If it die before it has left the house it would be buried by women just as a still-born child, the men refusing to assist. After the cord has separated (one week) the child and mother leave the house and appear in public. The child's head is oiled this day and sometimes medicine made of charcoal is pasted on with some beads as a preventive against injury by the strong sun.³

The child is named usually after the maternal uncle's child-name which is given by the uncle (Nyasa).

¹ In an Angoni village a woman I saw buried the placenta under the floor of the hut, using a hoe to dig with, upon which she first milked her breasts—the first milk. This to prevent abscess in the gland.

² With still-birth, women accuse their husbands of having syphilis, and "a child is often born with sores on it."

³ Medicine called *Pfundabwe*, see p. 295.

Mortality among twins is high, they are always treated alike, and, as children, wear similar clothes. They are not liked very much, but are not killed. Deformed children are killed at birth, being strangled by the women in attendance. I have only seen one case of marked congenital deformity (hands and feet in a boy aged seven years). He was allowed to live after some trouble at the mother's intervention.

The umbilical cord is watched and its separation is awaited, the child is laid on its side so that on separating the cord shall not fall on its genitals, as this would cause the child to become impotent. The cord is buried under the verandah. This day the child and mother are shaved, a tuft of hair is left over the fontanelle of the infant (Fig. 7, *g*), on which is applied medicine called *Pfundabwe*. This is applied at intervals till the closing of the fontanelle; its action is to prevent the harmful effect of the sun. The child is given its name by a godmother (Chipeta).

The child is steamed as a preventive measure against *mauka*. The house among the Nyasa is not replastered and the effects burnt as with Chipeta. The *mkuluzi* (or *mkuzi*) belt is applied immediately after the child has been washed. It is made from the *nsavo* (calico) used by the mother to wipe her husband and herself after the last coitus at the time she found herself with child and was danced. It has been preserved by the woman's mother, and is put on the child by the woman's friend, *i.e.*, the woman who gave her her name as a child (in some cases a man's second wife or his sister may perform this function). This belt is left on the child till it falls off, or is taken off by the child itself. *Mpoza* is medicine placed under the sleeping mat of man and wife when he resumes inhabiting same house.

Four to five is said to be the average number of children born to one woman, twelve being the greatest number known. One or two of the family commonly die in infancy. Twin births are said to be common. I have only heard of one triplet birth, mother and all three dying.

A woman not wishing children will take medicine if her period is two or three days overdue. Sterility among women is fairly common; a sterile woman is called *chumba*. Medicine is taken for this condition.

Among men, want of virile power is complained of frequently, but they expect too much and take many drugs in the hope of improving matters.

Child-birth out of wedlock is no cause for reproach; the child belongs to the mother.

The population is increasing. Mortality is high among children owing to wrong feeding: at three months gruel is given and at eight months porridge, big lumps being thrust into the infant's mouth; at twelve months green *chimanga* is given. Diarrhoea is a common cause of death, also, from one to three years, malaria. The death rate is highest in the rainy season.

DEATH AND BURIAL CEREMONIES.

A dying man is attended by his wife or wives, his eldest sister, and sometimes his mother. His head is always supported all through the twenty-four hours by one of his women-folk. I saw the headman, Mterera, when very ill, supported on the laps of four of his wives. When the women see the man is just dying they go away, and his brother and male friends come in and stay till after he is dead. A woman is tended by her mother or sister, her brother and husband being present till after death. The woman's corpse is prepared for burial by the women. In the case of the man the uncle and brother at death cover the body and then ask some friends to act as *Adzukululu*. There are usually two or four of them.

They prepare the body by washing in water, straightening the limbs, closing the eye-lids; cloth (or bark cloth) is put round the loins. A woman is covered to the breasts; any bangles, etc., are left on, and oil and beads are put on the hair. The body is then enclosed in a sleeping mat—usually a new one. Thus prepared the deceased lies in his own house for two or three days. The relations are summoned; wailing is commenced immediately after the toilette is complete, the wife and some twenty or thirty women taking part. If the wife is being mourned the husband sits outside the hut. The body is on one side of the room, the wailers sit with extended legs on the other side, the *Adzukululu* playing *Nteteredzi* on four drums. This is continued for three days. If the relations are far away, mourning goes on for one day and then begins again on their arrival. The wailing continues till 10 p.m., and after two hours' interval for rest and sleep, is again continued for one hour, *i.e.*, 12 to 1. It is started by the wife, who is immediately joined by the other mourners; a second interval occurs from 1 to 4 a.m. The wailing ceases about 4 p.m. on the second or third day, so that the burial may take place just before sunset. The grave has been dug in the day-time by the *Adzukululu* at a spot a little way outside the village (Mañanja), indicated by the medicine-man, who has been consulted in secret by the dead man's brother—the spot being encircled by medicine.

The body is carried to the grave by the *Adzukululu*, four of them carrying it, enclosed in the mat, by two poles, one fastened on either side, supported on their shoulders. They are preceded by one of their number carrying three or four pigeons tied by their legs to a stick or a flag, held up aloft and carried. Beer is also, on passing cross roads, poured on the ground on the spot marked x in Fig. 3. Behind the body come the other *Adzukululu* and some men, playing drums and singing; sometimes women sing *Kungu* followed by the wailers. The singers and wailers remain about fifty yards away from the grave, the rest going to the grave. The two head *Adzukululu* descend into the grave and receive the body from the others—no rope being used to lower it. The grave is 6 feet deep, always east and west, but the head of the corpse may be either end, and the body is turned to one or other side, facing a small hole hollowed out at

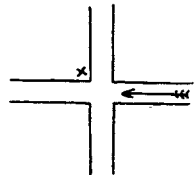


FIG. 3.

one side, into which the live pigeons and two small pots of beer are put. The women and children first approach and throw earth into the grave: this to prevent them dreaming of the dead. The grave is then filled in with earth and a heap made over it.

In returning from the grave the *Adzukululu* go first, then the deceased's brothers followed by the rest. There is no singing. They now go to wash at a stream. There is no precedence in washing, but they never on such occasions rub each other's backs. The washing is done as a purification to wash away ideas of the dead. After washing, the *Adzukululu* take a hoe which has been used at the burial and walks a hundred yards or so and then make a cut in the ground with it, one after the other each man does the same at half yard intervals, followed by all the women. At 5 p.m. the medicine-man visits the grave with a relation of the dead man. Medicine is put on the grave. The medicine-man carries a stick (*Msonga*) or fifty sticks, *Nseketera*; they watch by the grave to see that no *Mphiti* approach. If the medicine-man see *Mphiti*, he asks the other man, "Do you see them?" If he says no, his face is then washed with medicine to make him see, and he answers, "Yes, I see so and so, and so and so." The medicine-man then asks, "Shall I kill them?" If he says yes, they are made to approach by the medicine-man's medicine; then he takes one of his sticks and pushing it up the *Mphiti's* anus breaks off the end (= *Ku-tseketera*)—the *Mphiti* then goes away and dies later. Return is made to the house of the deceased where the *Adzukululu* and relations stay and sleep for ten days, fed by the deceased sister, everyone, friends and relations, having brought food (chickens) to give to her on their arrival; any remaining are given to the *Adzululu*.

The night sees them dance *Gulivankulu* (Vinyao); only the men dance, often naked, the women singing and clapping their hands: no children are allowed to witness the dance. The *Adzukululu* and members of the deceased's family do not dance; the dead man's father's family, however, may do so [Chiswani]. This sometimes is danced for two or three nights. The Vinyao, sable or elephant image, made of grass, is brought in on the third night, that is, the evening after the man is buried.

The grave is covered by a grass roof, sometimes enclosed with walls. In the case of a chief a big hut is built over it with a fence round; the roof is covered with blue calico with holes cut in it, and inside it is hung with strips of calico. Pots and baskets, broken, are placed on the mound. After a year white calico is put on the grave.

Should the village be moved a pot belonging to the deceased chief is taken with them and buried in the ground in the new village, the mouth being above the surface of the ground: then whenever beer is made in answer to requests made by the deceased to someone in his dreams, some is put into this pot and calico hung round it on a tree.

In olden times the graves of Mañanja chiefs only had a fence round them. When the fence (or roof) has to be repaired the man who is to do the work knocks and, clapping his hands, asks whether he may enter.

Again, in old days slaves were buried with a chief instead of pigeons, also ivory and guns, pots and pans, and hoes. Makanjila was probably the last to be buried with slaves. The corpse lay on a number of live male slaves. Under such circumstances, if a slave sneezed he was allowed off.

On the death of anyone all fires in the houses are extinguished; fresh fire is then made in the dead man's house and passed from hut to hut. The people collected at the dead man's house may only eat food cooked at that house. Eating of food cooked at the house, into which salt has been put, would cause death.

After the lapse of a month the first beer is made, *moa wa matapata* = beer of rottenness (*i.e.*, the corpse). It is made from leaven brought by the relatives. Dancing and singing accompany the beer making. The first day's beer is called *moa wa m'meto* = shaving beer; the second day the *Adzukulu* shave the widow or widower, and then each relation in turn. The beer itself is not used to shave with among the Nyanja. The operation takes place at the door of the dead man's hut. The *Adzukulu* are not shaved. After this ceremony cohabitation between the people of the village is allowed, the pubis being shaved. The mother and wife or husband usually wait till after the second beer. A pot of beer is let into the ground at the head of the grave, at the first beer making.

After six months or one year beer is again prepared—the second beer. Everyone comes except *Adzukulu*. There is much dancing and beer drinking, the idea being that the corpse has now disappeared, and he will not be remembered any more. Dancing takes place on the first night, and beer is drunk on the next day. The widow shaves the first day before sunset—the brother of the deceased informs her that she is now free to marry again. The night after being shaved she has to sleep with a man paid by her relations. He is called *Fisi*, because he steals his adultery. No medicine is taken or used for washing in.

For ever after having acted as a *Mdzukulu* a man is expected to behave as a funny man. He may swear, use obscene language, insult people, commit adultery, make obscene overtures to women, pull off their clothes, etc., take chickens, take beer and drink it when he sees it being made in the village where he acted. Where women have acted as *Adzukulu* with the men (burial of a woman) they may take liberties with each other. Any *Mdzukulu* may play practical jokes on the village. An old joke played by him was the putting of hare's dung on a man's doorstep intimating that he was impotent (A-Nyanja). At Likoma (Atonga) grass was knotted up in bunches all round a village by *Adzukulu* in joke, again intimating that all the men of the village were impotent.

In the vicinity of Fort Johnston every year each person takes a maize cob at the time when it is ripe for eating and puts it on the grave of the old chief Mponda; this is also done with *mapira* always before any of the crop has been taken for food. Maize cobs are also presented at the grave whenever *Likwata* or *Chindimba* is danced.

After the death of a wife the husband mourns five or six months and is then given medicine, after which he may marry again, and without which, should he

marry, his new wife would die. A widow after her period of mourning of two or three months, if sought in marriage, sends her suitor to her sister, who arranges for some other man to have coitus with the widow, after which she is ready to marry the suitor. Without this her second husband would die should she have committed adultery.

After the funeral of a chief the headmen of the district call the chief *Mdzukulu*, who buried the late chief, and hand him a red blanket and tell him to cover the man who is going to be chief. This he does, at the same time hitting him hard on the head. This action is received with shouting from the women, who put ashes on their heads. He then sits surrounded by his brothers and sisters at one end of the open space, the headmen at the other, the leader of whom gives a sermon.

At Chipoli on the south-west arm of the Lake the corpse is wrapped in a mat and weighted, and then sunk in the lake. The same practice is followed occasionally at Monkey Bay; it is done with the idea of avoiding interference by *Mphiti*.

Lepers and persons dying of small-pox are not bewailed; the former are thrown in the bush for *Mphiti* to eat, as it is thought the disease is spread if they be buried. A man accused of *Mphiti* and dying of *mwavi* used to be burnt on a pile of wood.

[*Note on Angoni.*—In the case of a chief the body was kept ten days to be sure of death; it was arranged in a sitting posture covered with cloth, the eyes open, a stream was dammed up with stones and then a pyre made below the dam and the body burnt, the waters were then let free to wash away the ashes. The new chief stood from morning to afternoon on one foot wrapped in the smoke of the pyre.]

In speaking of the dead the expression, "the late so and so" (= *mzimiuzi* . . .), is used. A man will not refer to children that have died in the presence of his wife, as she will cry either from grief or because it is the custom so to do. Some burial grounds are not approached.

ARTIFICIAL DEFORMATIONS.

At birth pressure is applied to the head of the child to reduce any deformity which may be present—no deformation is attempted. Various practices of piercing nose, lips, and ears have been and are in vogue.

Piercing of the upper lip and subsequent wearing of a thin stick, sometimes a bone (*ntona*), until the aperture was large enough to admit a much bigger ivory or wooden lip-ring, solid or otherwise (*pelele*), was practised among the Nyanja women, but it is going out and is now seen only in the old women. Occasionally the lower lip was pierced in the same way. At the present time among the Machinga, Yao, and many Nyasa women, the left *ala nasi* is pierced in the same way when a girl is eight years old. When adult a metal or ivory solid ring is worn (*chipini*). A woman piercing the right *ala nasi* would be laughed at and called a fool.

The *pinna* in the case of men is sometimes the seat of a small circular hole originally copied from the coast Swahili whose tribal mark it was, and who did it to prevent enlargement of the scrotum.¹ A small perforation of the lobule is commonly seen among the Chipeta-Angoni. These perforations are now, however, seen indiscriminately among various tribes in the country. The former I have seen in a Nyasa—it is also general among the troupes of professional dancing-boys, who wear a cord or a small stick through the ear, usually the right ear. The stick I have seen among Asenga, Nyasa, Machinga, and Achewa. No definite earrings are worn. The habit of wearing three or four discs in the margin of the ear is only seen among coast women (Zanzibar) who have come to live in the country (Fig. 5).

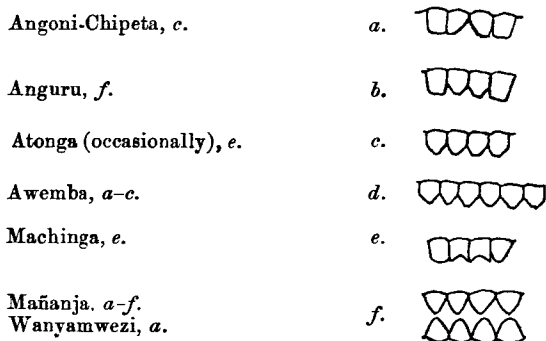


FIG. 4.

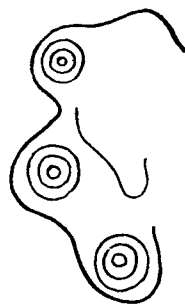


FIG. 5.

Dental mutilation was, and is to some extent, still of tribal significance, though mostly performed for appearance (Fig. 4). Actual extraction is but very seldom seen now.

A prominent breast is admired among the natives, and to secure this a cord is tied round the chest by girls, at the upper margin of the gland, with the idea of making it project. I am inclined to think it has the opposite effect. No attempts are made to elongate the breasts, they become very pendulous without any artificial aid.

Amputation of fingers and ears, castration, etc., have in the past only been practised as punishment.

Young girls by constant pulling on the *labia minora* and enclosed clitoris try to cause elongation, as such is said to be admired.

Elsewhere I have referred to the penis of natives, which I consider to be characteristic in its hardness. This is said to be caused by the "young man" purposely injuring the organ by beating it so that it never returns to normal softness when not erected.

Cicatrization.—Cicatrization is practised by both sexes of all the tribes. In former times the designs had a certain significance, such as to indicate the tribe, to signify that the wearer had been initiated, to commemorate certain events, and so

¹ This is interesting, inasmuch as the ears are pierced in England, commonly with the belief that it prevents bad eyesight.

forth; now they are in most cases mere decoration, except among the Awemba, Angoni, and Makua, where the tribal significance is still maintained (Fig. 6). It is still a fairly common practice amongst women to mark events of importance by an addition to the tatu, usually on the thighs and abdomen; and individuals may be seen with every available inch of skin covered with designs. A shooting and hunting tatu is common amongst older men.

There are two varieties: (1) the common scar tattoo, produced by making incisions through the skin and rubbing in preparations of charcoal which leaves a more or less raised scar darker than the surrounding skin. (Such marks in an albino have a blue colour.)

(2) Marks produced by use of the cashew tree which has been imported from Zanzibar. After its application to the skin the superficial layers pull off, leaving pink skin which then gradually darkens till it is darker than the surrounding skin, but with no scar. These marks are most commonly seen on girls and young women, and some small boys on the face, also sometimes as rows of spots $\frac{1}{2}$ inch in diameter across the whole of the upper part of the chest.

There is no history of the introduction of cicatrization, both sexes appear always to have been marked—the tribal tatus were in the old days made, in the case of a boy, usually at the age of about ten years by the medicine-man. Now the operation is performed by anyone, it seems, at any time, and any marks are taken. It is rather a fashion, and a man or woman without marks is said to look ugly. Tatu designs are usually quite symmetrical, no substances (pigments) being used other than charcoal, the scars being in the form of dots, short or long lines, half circles or lozenges (Fig. 14).

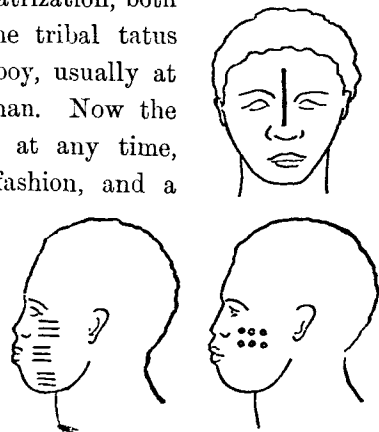


FIG. 6.

ORNAMENTS.

There do not appear to be any special ornaments indicating station in life, or connected with dances (*q.v.*).

Head.—In the ordinary way the hair is kept fairly short, being cut when necessary and periodically shaved (Fig. 7). Occasionally one sees very long hair standing out from the head 6 inches or more, as in the case of an insane man at Blantyre. There is now no very definite meaning in fashion in which the head is shaved; in former times (and at the present time to a certain extent) it had tribal significance. Various dandyisms are now seen, such as a shaved parting ending behind in a spiral. The complete shaving of the head accompanies many ceremonies, principally after the interment at a burial ceremony, and at initiation ceremonies. A man starting on a long journey will often shave the head. On the other hand a wife left while her husband is away for a long time allows the hair to grow and does not wash.

The Angoni men collect little bunches of hair together and bind them with grass so that they stick up all over the head or are restricted to the front part of the scalp where, when they get long, they hang down over the face. Fancy hair shaving is never seen among the women except those recently from the coast. There is no particular sex difference in methods of "doing the hair"; the coiffure is not altered after marriage and no wigs are used, neither are any colours used to adorn the hair. Ornaments worn in the hair are few, occasionally some bead-work by young girls or a feather by boys, and more especially Angoni. Combs, ornaments with bead-work are found.

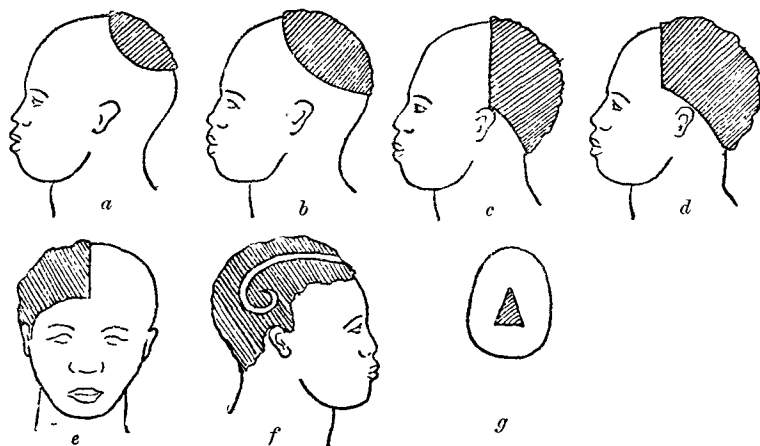


FIG. 7.

(a) Chipeta, "Tsumba"; (b) Angoni ♂; (c) Atonga ♀; (d) Mañanja and Machinga ♀ "Mduliro"; (e) A'man who has attended one Malivo and must attend another in a few days; (f) Fanciful shaving; (g) New-born child.

The amount of hair on the face is very variable, and the treatment of it equally so. As a rule there is little, if any. Epilation is commonly practised and a strong growth of hair is shaved. On the other hand beards, etc., of considerable size are seen sometimes, and these are usually not trimmed. The longest beard I measured was 38 cm. from the chin to tip. It was kept rolled up.

The Atonga seem to have more hair on face than other tribes, their moustaches resembling those seen on Japanese.

Body.—Beads are worn by nearly every woman, either at the neck or round the wrist or the waist.

A string of large blue beads is most commonly worn round the neck by girls and women after *Inyago*. At initiation ceremonies ropes of small blue beads are sometimes worn. Those worn round the body are single strings of beads of various kinds. They are not always worn, and the wearing I think is discontinued during menstruation.

Bead aprons are found. Beads round wrists and ankles are worn in simple strings. Dancing boys sometimes wear a bead necklace, otherwise beads are never seen on males.

Necklaces, most commonly for children, are made of a number of little square pieces of hippo ivory strung together, ornamented with geometrical designs.

Medicine is often carried in a little packet suspended round the neck, as also charms of various kinds. The medicine may be some powdered charred roots or little twigs, leaves, etc., of some tree; these are sometimes now wrapped up in a piece of paper on which is written some extract from the Koran (among Mohammedan Yao); this is then sewn in a little piece of calico and adorned with beads and suspended round the neck with a string.

Charms take various forms. Small pieces of wood or, to guard against attack by lion, teeth are worn. Armlets of the same kind are worn against sickness, and others are worn by Angoni, made of beads to which knives are attached. Bracelets of ivory, plaited grass and elephant tail hairs are also worn.

Metal and wirework bracelets are commonly worn by Angoni, also twisted wire finger rings and rings of lead and ivory. Heavy brass ankle rings and spiral brass leg and arm rings 6 inches and 8 inches wide are worn by some of the women (Atonga).

Bracelets cut from the nail of the elephant's foot are worn by Awemba hunters, and little finger rings cut from the scale of the ant-eater are worn as medicine against fever by headmen.

Belts made of wound copper wire are worn round the waists by Wankonde.

The use of pigments applied to the body is very limited. I have seen stripes of these, white and red, on the faces of young women, boys and dancers, generally after some ceremony. The significance I do not know. Pigments are now obtained from Indian traders, and I do not know how old the custom is. There is no beautification of face, body, nails, and eyes by pigments. The only application made to the skin is castor and ground-nut oils to keep it soft—no scents are used.

CLOTHING.

Among tribes of Nyasaland the amount of clothing worn varies very considerably from nothing to European garments.

Of the large majority, however, including Mañanja people, Yao and Angoni, one may speak generally.

The young children commonly run about naked, or have a strip of cloth covering the pudenda, supported by a string round the waist.

Among the adult population the amount of clothing depends largely on the affluence of the individual, and those who cannot afford much have little clothing. A man wears a strip of calico supported in front and behind by a string round the waist, a woman a piece of calico 18 inches wide reaching from the middle of the thighs to the umbilicus.

Of the more prosperous, the men wear calico from a little below the knee to the waist, carefully wrapped round the body, and kept in position by some kind of belt; sometimes it is folded across the upper part of the chest or sometimes crossed over in front and two ends tied behind the neck.

Women wear their cloth folded across the upper level of the breasts from right to left. Men and women often have two cloths, one over the loins, only the second fastening over the chest.

A menstruating woman also wears a small piece of calico corresponding to a diaper supported by string round the waist.¹ The same thing is worn after child-birth for six months. Angoni women always wear them.

The Angoni, Chipeta wear their cloth toga-fashion, carrying a fold of cloth on the left arm. An Angoni chief wears three such, blue, white and coloured, the first outside, the last next to the skin.

The material used is now practically everywhere European-made calico, formerly bark cloth only was used by Nyanja, though weaving had been accomplished by Angoni, where skins were and are used as articles of clothing.

There is nothing to distinguish men of various grades, etc. Fashion at the present time is very capricious—some patterned cloth being much worn one month will have no sale a month later; this is true both of men and of women.

There is no class uniform, and no "costumes" are worn save in dancing (*q.v.*).

Men are now seen wearing a piece of calico twisted up on the head in turban form, a custom lately introduced from the coast—the only indigenous head-gear is the string skull-cap worn by Angoni widows.

Under the heading of dress must be included the bead aprons worn by Yao and Angoni. Among the former the use of this garment is restricted to the women, who in the house sometimes wear nothing else; among the Angoni the children often have them and no other clothing.

Sandals are sometimes made of skin and fastened on the feet with a thong when crossing thorny country.

Among Angoni the *mwado* only used to be worn; this is a small hard-cased fruit which was hollowed out and worn just covering the glans penis.

FOOD, ETC.

The staple food throughout the country is either maize or rice, the latter only at various spots on the lake shore where it can be grown. Two fixed meals per diem are taken, at 9 or 10 a.m. and again at 6 p.m.; each consists of *nsima* porridge made from maize flour or rice flour or boiled rice with some *ndiwo* (relish) to which the salt is added. At odd times the native will eat anything that opportunity offers—a piece of cassava root, a boiled sweet potato, a roasted maize cob, etc.

The *nsima* is made by stirring flour (*ufa*) into boiling water till a stiff paste is formed; this is kept cooking for five minutes and then scraped out with a wooden

¹ Diaper = *methete*: a woman keeps five or six; they are never put away in baskets but always hung up; a woman changes every time she bathes, using two or three per diem; they may be given to a female child to wear, but are then not worn again by a woman.

spoon into a clean shallow basket or on to a plate. The *ndiwo* or relish, consisting of vegetables such as beans or a kind of spinach, a little fish or chicken, is cooked in a separate pot, and round these those about to eat collect. Washing their left hands in water, they take some of the porridge and making a sausage shape of it, dip it in the *ndiwo* and then cram it into their mouths.

Salt was obtained either from natural deposits or from "salt earth" on a stream bank near Fort Johnston, or from the ashes of burnt *bango* reeds or *machedza*; by a method of percolation through porous pots.

The native rather drinks between meals—water. After eating he may wash his mouth out and clean his teeth, using the frayed end of a piece of wood as a brush.

Alcohol.—With the exception of the people living on the lower river, who drink fermented palm juice,¹ beer is the common alcoholic beverage. Beer is made from maize (*chimanga*) or millet (*mapira*); the crop of the latter is very largely used for beer making; it makes the best beer and is certainly preferred by Angoni.

Gruel is prepared by boiling flour with water; after an hour leaven (*chimala*) is added fermentation sets in; and it may be drunk the next day; it is the sweet beer, *mtibe* or *ontondera*. On the second day it is again boiled and is allowed to cool; the third day more leaven is added (*chikatiko*); the fourth day fresh gruel is made, and the contents of the original pot, now called *nganga*, is added to it, making two pots of beer. It may be drunk the same day while hot or allowed to cool and taken on the second day.

Food-stuffs.

1. Maize (*chimanga*), millet (*mapira*, *mawaere*), rice (*mpunga*).
2. Cassava—sweet potato.
3. Beans and peas of many varieties.
4. Pumpkins, cucumbers, melons (*dzungu*, *mkuka*, *chibwende*).
5. Many kinds of leaves growing wild—also pumpkin leaves, of which a kind of spinach is made.
6. Bananas (*paw-paw*), sugar cane and reeds are sucked.
7. White ants, locusts, honey.
8. Numbers of small animals are eaten by Chipeta, Angoni, etc. With the spread of Mohammedanism this is going out; rats, mice, hares, rock-rabbit, etc. Chipeta will eat dog, and I once saw one eat baboon. Frogs, shell-fish, snakes, crocodiles, crows, vultures, eagles, are never eaten.
9. Fish (*nsomba*), fresh or dried, is much eaten, thirteen varieties being enumerated.
10. Chickens, ducks, wild birds that they may snare.

¹ Spirits used to be made by distilling from beer-and banana-and palm-juice by means of a pot and a gun barrel.

Gaga, the residue after pounding maize, is eaten by the women. No oils are used in cooking, but of fat and suet any native is very fond. Meat may be dried and smoked if in large quantity: flesh, fish and fowl is commonly roasted on spits; small pieces of chicken may be made into a kind of stew with beans and eaten as the relish. When on a journey the fire is commonly made against a tree. The cooking vessels are cleaned before use, not after. The fried fish eaten is often partly decomposed, and meat which is very high, even with maggots, is cooked and eaten, maggots and all.

Taboo.—Bushbuck is not eaten by many natives, as they say it feeds near graveyards. Fowls are not eaten by some, as this diet causes them to vomit; a snake-catcher never eats vegetables, and at the same time puts medicine on his hands. Many abstain from the flesh of certain animals as certain skin diseases are said to be caused thereby; all such diseases bear the name *wokuwenga*.

A man who loses a relation by drowning takes an oath that he will never again eat fish, and never drink water from such lake, river, etc. Here the idea is of course simply to avoid eating part of the relation.

A Nyanja and Machinga will not eat the flesh of the hippopotamus, because on the body they say there are the marks of a string round the loins and of a mat on his back, adding that long ago he was a man. Animals of prey would never under any circumstances be eaten. Milk used never to be drunk by an adult, as it was said to cause a man to become as a child. A man would not dare to drink woman's milk as it was said he would surely die of dysentery.

Tobacco, etc.—The smoking of tobacco was a custom introduced from the coast. Chewing was general among Machinga and Yao men and women, while the Angoni and Mañanja snuffed. With the tobacco a little lime, made by burning shells, was taken in the mouth. Giddiness and sleepy sensations were experienced after chewing. The Nyasa and Awisa smoke a hubble-bubble, the water vessel being a large sausage-shaped gourd with a reed stem supporting a large bowl of *mbabwa* wood, sometimes very nicely carved (Plate XXVII, Figs. 5 and 7). The Amyanja smokes a pipe with the bowl made of clay and the stem of bamboo (Plate XXVII, Fig. 6); these are made by the women. Tobacco is grown in nearly every village, a large-leaved rather coarse variety; it is sun-dried and rolled up into hollow rings 6 inches in diameter and 3 inches broad. For snuff (*Fodia womunsa*) the sun-dried tobacco is further dried over a fire on a pan, when cold it is ground on a stone with a smaller stone by the women, and with it is mixed some ashes of the *ngosa* fig-tree.

At Blantyre I obtained a water-pipe made of bamboo stem; this was the water reservoir; a stem of reed supports a little clay bowl. The mouth is placed over the upper end of the bamboo. Bhang (*cannabis indica*) is smoked in a pipe of this kind.

AGRICULTURE.

The people live by cultivating the soil. Both sexes help in hoeing and planting, the collecting of the crops being mostly done by women. The hoe is the

only implement used. Sowing is done after the first rains, about November; the harvest takes place in May to July. Gardens are at varying distances from the villages, depending partly on the soil becoming exhausted after years of cultivation. Boundaries are marked by leaving a line of uncultivated ground, sowing a line of a different crop, tying knots in the young crops at intervals, ditches, etc. In starting a new garden, woodland is often taken; the trees are cut down, leaving stumps 3 feet high; the undergrowth is cleared away and burnt, the ashes distributed over the land, which is then hoed, really very superficially; the earth is then made up into little heaps with a central hole in each, after the first rains four or five grains of the cereal (maize, millet) are dropped in each and covered with earth; as the young shoots grow the hole is more and more filled in.



FIG. 8.

With the cereal is planted the seed of peas, beans, pumpkins, the former on coming up then grow up the maize stalks. The seed is last year's product and not specially selected.

Depredations among crops made by elephant, hippopotamus, large antelope (eland and kudu), pigs and baboons, vary in extent in different districts. Little grass huts are built, raised above the ground like a pile-dwelling, in which watchers are stationed. Fences, sometimes extending for miles, are built. The gardens of the chief are hoed by his slaves or the people of the village. Maize is collected in the cob, and after the outer coverings have been removed is stored; so is the *nkokwe*, millet in the head; beans and peas are stored in baskets. Medicine is put on the ground to ensure a good crop, and a piece of stick is sometimes hung up for good luck.

CATTLE, ETC.

The keeping of cattle is practically restricted to certain tribes living in districts free from tsetse-fly (Angoni, Wankonde); among these people wealth is reckoned by cattle. The milk is little used; the flesh is eaten only when an animal dies. Marks of ownership are made by cutting the ears (Fig. 8). Cattle are kept in open kraals by Angoni, in a compartment of their houses by Wankonde; they are tended by the small boys as a rule. Goats and sheep are kept all over the country. Castration of cattle is a recognised practice (*kufula*).

Angoni make their shields from cattle skins; their spear handles are covered with goat hair (beard); hair anklets and armlets in dancing costume are made from goat hair. Skins are used as dress to a small extent.

HUNTING.

A man intimates to the community around that he is making a hunt by clothing a boy of about ten years in leaves, who precedes him and the men from his own village through adjacent villages; at each village the lad has to lie down and

is beaten with branches, or leaves are thrown at him. Men join from all the villages. Next day they set out in line towards the nets they have set, the inaugurator of the hunt in the middle. Game is driven into the nets by the advancing line of men and their dogs and is speared. On the other side of the nets are men set as watchers, who would let down the net at the approach of any big antelope, who would otherwise break it. All the game killed is taken back to the boy clad in the leaves, who watches it in the background. At the end of the hunt (*nsimba*) the inaugurator of the hunt chooses his portion after it has all been divided up, and gets a hind leg of every beast killed by the others. The net used is 200 to 400 yards long. Hunting is done in the early morning during the month of July.

The Mañanja and Chipeta did not hunt elephant, but dug game pits. They used bows and arrows. The Yao, Machinga and Amangoche, possessing guns in the old days, used to make big hunting parties, staying away two and three months and killing elephant and other game. The hunter inaugurating the hunt had the first shot at an elephant, and all ivory was his till sold at the coast, when the followers got their proportion of calico brought back. The skins and horns were divided. The flesh was cut into strips and dried over wood fires. The chief has choice of the biggest tusk on the return of the party to the village. Yao elephant were shot in the vicinity of the village, the chief claimed the ground tusk, *i.e.*, the tusk on the side on which the elephant dropped. Before starting on such a hunt the *ula* would be cast to see that they would have good luck. All those taking part would have "medicine" rubbed into little incisions cut on arms, shoulders, and sometimes on body. *Mankwala* (medicine) was also tied on the guns; it consisted sometimes of a number of pieces of wood threaded on a string, or I have seen another made of sun-dried animals' blood and charcoal. Should the wife of anyone of the expedition commit adultery her husband might get killed. A man going to hunt will never have intercourse with his wife the night before, otherwise he would be unsuccessful.

Bows and arrows are used, the bows being sometimes about 5 to 6 feet long. The "Mediterranean release" is employed, and the arrow rests against the left side of the bow. Three kinds of arrows are carried in the same quiver (*podlo*): *nyankwa*, a blunt arrow for stunning birds; *nchato*, with a large iron blade; and *mpaliso*, with a small poisoned head.

The Mañanja use a long-handled, short-bladed spear, usually thrown at a short distance (a few yards), when it is grasped in the hand about the middle. From a further distance (thirty yards) it may be pitched by holding at the extreme end. Traps of various kinds, made of a bent sapling and noose, are commonly used. Dogs are used in hunting to drive, to run down small game and to keep the bigger animals at bay. The only arrow poison used is *chuola*, made from euphorbia juice and other things; it is used in warfare and elephant hunting. The flesh of animals killed with *chuola* is not considered safe to eat. Children from twelve years of age accompany their fathers hunting.

FISHING.

Khoka.—A drag net 50 yards long, in the river 6 feet deep, in the lake 4 feet deep.

Kombc.—A net set across a shallow river, 20 to 50 yards long, 6 feet wide.

Chilepa.—A funnel-shaped net 5 feet in diameter at open end; it is held by two men, who meet a shoal of the small *usipa* (like whitebait) as they come in any given direction. Floats for the nets are made of *gumbwa* tree pith or *mpepe*; stones are used as sinkers.

Mono.—A "lobster-pot" fish trap of two sizes used in rivers and on the lake shore; the bait consisted of *gaga* (maize-chaff).

Fish-spearing.—Is practised by torchlight, as the fish try to go up small streams when the rain flood them near the rocks; fish are also sometimes speared in Lake Nyasa. The fish spear is called *chomba*, and has a single point.

Hooks.—Hooks are baited with fish or *nsima*; they are tied to a large reed and left all night.

Poison.—The roots and leaves of a shrub called *ombwe*, pounded in a mortar in water and thrown into a river, cause the fish to come up to the surface stunned; *nkhadzi* (euphorbia) is also used. Children of nine and ten years go fishing. Women do not fish.

FIRE.

The simple fire drill is the only means of making fire; wood is the only fuel used (and charcoal for smelting). There are no sacred or religious fires, and no fire god. Fire is carried from hut to hut in the form of a smouldering log, and blown into flame with the breath. After the death of anyone in the village all fires are extinguished, fresh fire is made outside the dead man's house to cook for all, and from this fire is taken to every hut.

HABITATIONS.

Houses are built of supporting poles, the roof frame-work of bamboo, the roof of thatched grass, and the sides of the house of reeds or *chemanga* stalks; the

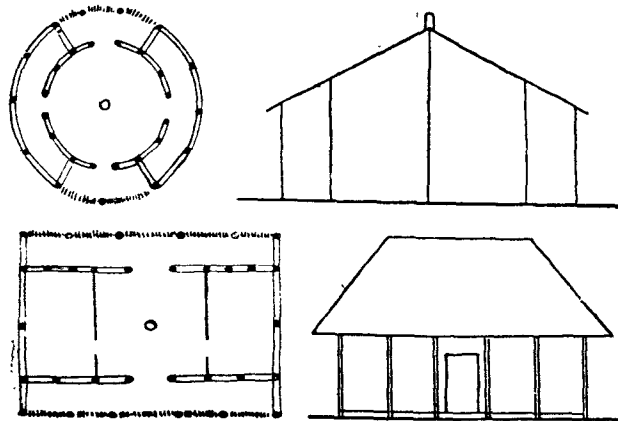


FIG. 9.

whole frame-work is secured by bark lashings, the walls, inside and out, and the floor are plastered with mud from an ant-hill, mixed with a little cow dung, if possible. In some houses the walls do not reach up to the roof, leaving a space through which smoke may escape and air enter.

At Chipoli and at Mangoche houses were built on piles and in trees respectively to avoid lions. A house is occupied by a man and his wife and any young children; no elder relations are allowed to sleep there. The children, when aged about five years, go to live with the maternal grandmother till their first *inyago*; there may be thus a dozen or more children living with the grandmother, who feeds them and sometimes also provides clothing. Such children are said not to have coitus with each other as they are relations. After *inyago*, if not married, the girls go to live again at their grandmother's house, the boys to the *nyumba ya bwalo*, four to ten or more using such a house as a dormitory. They get their food from the grandmother, visit her and may use her utensils, sit on her bed, but never so with their mother.

In houses where there are partitions or verandah rooms these smaller rooms are often used as bed chambers, and always as store rooms for baskets, pots, hoes, etc. The native usually sleeps on a mat laid on the ground; in some cases the ground is raised into a kind of dais (Angoni and at Mangoche). Among Yao and many Mañanja, wooden beds are now used, introduced from the coast. The Angoni make wooden stools from conveniently shaped branches (Fig. 10). The native has so few belongings that he makes nothing in the way of shelves, nor hooks for hangings. Clothes are stored in baskets. The hut is kept swept and all refuse deposited on a dust heap near the hut.



FIG. 10.

The doorway is closed by a door made of reeds and grass bound together. This is placed against the inside of the doorway, and a pole dropped in between two sets of supports. In the day time the door often rests against a fifth support. There are no windows and the smoke finds its way out through the roof thatch. A guest house (*kvka*) with fence (*chimbunde*) round it used to be found in villages, but does not exist any longer.

There are no ceremonies connected with the building of a house or the preparation of the materials for its construction. There are no household gods. The fire must be in the middle of the hut, and on one side is the bed. Any people visiting the hut must remain on the opposite side of the fire, except "friends," and on no account must children go round to the other side, because under the bed the woman's diapers are laid to dry. The fire must not be touched by the male children, but is tended by the girls. The fire is generally kept burning continuously, but it is of no consequence if it goes out—a burning branch is brought from a neighbouring hut. At the death of a headman or other person in the village all fires are extinguished, fresh fire is then made in the dead man's house and from this passed from hut to hut. There is only one method of making fire, that is, the fire stick.

Near the house, which is often surrounded by a fence, either within it or outside, is the grain store or *nkokwe*, a cylindrical structure made like a hurdle, set on a platform below, supported on posts 2 feet above the ground. Sometimes the whole, sometimes only the lower part, is mudded over. It is covered by a thatched roof, which can be removed at will. At one point at the base there is commonly a hole to allow of taking out the *chemanga* (maize) cobs as they are required. These *nkokwe* vary in size, average being 6 feet about the platform and diameter 4 feet. There is often also a pigeon house, made of the cylinder of bark removed from a tree; this is put in a tree or supported on poles, and the ends partly closed with crossed sticks, near it will be a broken pot supported on a forked stick, kept filled with water for the birds to drink. Any sheep, goats or cattle are kept in the *kholu* or kraal made of trees, and often pretty strong, and covered with thorny branches to withstand the visits of leopards, etc.

The household furniture consists of little. Near the middle of the hut is the fire, with some big stones on which to set cooking pots; sleeping mats either set out or rolled up; two or three cooking pots and baskets of various sizes; a water pot and gourd ladle.

POTTERY.

There is no tradition whence pottery making was introduced. No potter's wheel or mould is used, no tools are used save a knife to score patterns on the pots. The material employed is a kind of clay, to which is added some cattle dung (I presume to get the small pieces of grass). A pot is made at one sitting, building it up from the open mouth. It is done by women, who are potters by trade. Before baking, the pot is dried in the sun, then rubbed over with green leaves, which prevents cracking. Baking is performed by making a fire below and all round the pot as it stands open end downwards. Among Angoni and Atonga some pots are "painted" with plumbago (*chezero*), the *mbale* with *tamdire*, a red earth, oxide of iron, before burning. The decoration consists only in a few scored lines near the neck. No pottery figures are made, and no special funereal pots; the deceased's own pots are broken and placed over his grave.

The following are the different varieties of pottery vessels (Fig. 11):—

Mtsuka, a spherical pot for water (*a*).

Mkati, a larger pot of similar pattern for beer-making (*e*).

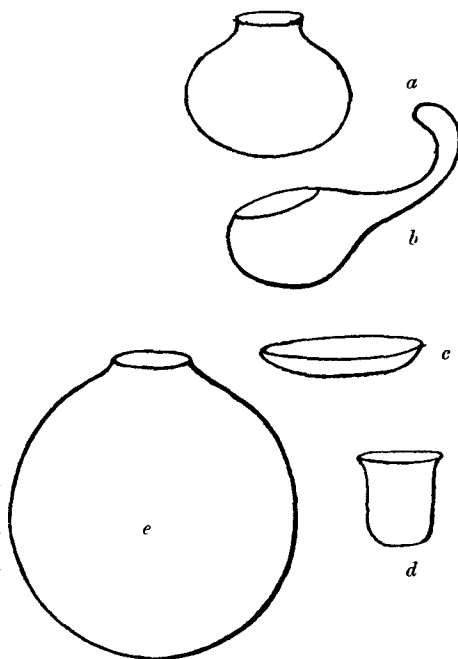


FIG. 11.

Mpika, a beaker-shaped vessel in which the relish is cooked (*d*).

Mkhati, a small *Mpika*, always kept by the side of the fire with warm water in it. With this the woman washes her husband after intercourse; she may use the same to wash herself, but more usually goes to the ordinary washing-place, a flowing stream.

Mbali, a dish (*e*).

Of other vessels may be mentioned a jug used by the Wahenga, the gourd ladle of universal use (*b*), and the large wooden mortar, 2 feet 6 inches high, with a pestle 3–4 inches in diameter, employed by all the tribes for pounding grain.

Weaving is practised by the Angoni only.

Basketwork.—In former days mats were made of split reeds and baskets of bamboo; now the making of mats from palm-leaves has been learnt from coastal natives, and the Chipeta varieties of basket have been copied by other tribes. The following are the principal varieties of basket in use (Fig. 12):—

Nsengwa, a small tray, used for flour, beans, etc. (*a*).

Lichero, a large tray, used as the *Nsengwa*.

Nthanga, a circular pattern with a square base, for *chemanga* cobs (*b*).

Tamanda, a circular pattern with a wooden rim and cover, for cloths (*c*).

Chinumbi, a small watertight basket.

Sisili, a large basket, also watertight, for beer.

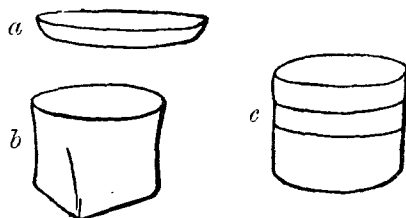


FIG. 12.

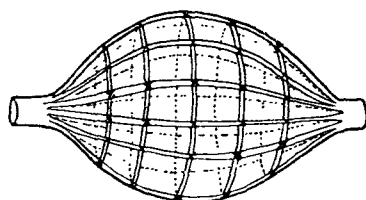


FIG. 13.



FIG. 14.

There is little ornamentation of the baskets except of the *tamanda*, the bent-wood edges of which have designs cut and burnt on them. Plaited grass bracelets are made, rough cages for carrying chickens, etc., are made from split bamboo (Fig. 13). A form of basketwork is used to make the *nkokwe* or grain store. Fish traps of very complicated design are also constructed. Gourds of various kinds and sizes take partly the place of baskets.

String.—The bark of the *bwazi* tree is cut off and dried in the sun; it is then rolled between the hand and the thigh into string with no other treatment. The bark of the *tingo* tree is used to make string = *chingwe*; this tree is planted for that purpose. Rope is also made from the baobab tree. Plaited palm leaves, *ngwabala*, are used for many purposes, and are stretched across the framework of the bed to support the mat.

String is used to make their fishing nets, necklaces, and other beadwork. For bow strings *tendo achilles* is used, also strips of skin, *ntsinga*. On their musical instruments ordinary string or grass is used to form the strings.

Needles made of sharpened bamboo were formerly used, the blunt end being chewed into a pulp and then incorporated with chewed end of the string.

Netting is done in the ordinary way with a simple shuttle.

LEATHER.

The skins of their domestic animals—cattle, sheep, goats—and of antelopes and leopards are prized. No fish skins are used. Skins are removed from the animals by a median ventral incision and other incisions along the inner sides of the legs. The Yao leaves the hair on the skin, some Chipeta remove it. The only treatment a skin gets is scraping and drying in the sun, then rubbing with stones and beating till worked soft. This is done by the men. I have only once seen an ornamented skin, that of a *sitatunga* from Lake Bangweolo, North-east Rhodesia. Skins are but comparatively little used, occasionally to sit upon. In German territory every chief sits on a leopard skin. They are used of course to cover drums, make bags for carrying a supply of grain, and to make bellows for the metalworker. The skins of small animals are used as purses and tobacco pouches. Among the Angoni and Chipeta they are used as loin-cloths, also to support the baby on its mother's back, and of course to make shields.

DYEING.

There is practically none. The root of a certain tree is cooked with grasses to give them a black colour, to be used in making mats with patterns; this process has been learned, I think, from the coast.

At Likoma, the root of the red *ntsisi* tree is boiled in water and the decoction used for staining, and, I think, strengthening their fishing nets. Dyes are not used for any part of the body.

PAINTING.

Recently decoration of the outsides of their houses has come into fashion, a red earth and lime being used to depict men, cattle, antelope, steamers and bicycles. Often merely geometrical designs are made, I think by Mohammedan coast people.

STONE-WORK.

No stone implements are used, except stones for grinding *mapira*, some small peas and snuff. There is a lump of stone at Fort Anderson on which holes have been made for playing the *ubau* game.

METALLURGY.

Among the natives in Nyasaland, with the exception of copper in the north (Wahenga) and brass in parts near the Zambesi, iron was the only metal worked.

Other metals now used and obtained from traders are, copper, brass, lead, tin, etc. Iron = *chitsulo* ; brass = *sapuli* ; copper = *mkuo* ; of iron, hoes, axes, knives, spears were made.

At the present time copper- and brass-bound spears are still found at the north end of the lake ; copper bracelets and body rings also. The brass wire bracelets elsewhere are made from imported metal. Iron-stone ore in the old days was smelted in a furnace of stones made in the form of a long drain 3 feet long and 1 foot high ; in this a mixture of lumps of ore and wood charcoal was put, and single bellows of goats' skins were used to make the draught, which is aided by building a chimney at one end ; at the other end a hole is made in the ground to receive the molten metal. A quantity of this is then again melted in a hole in the ground with a charcoal fire about it, and then the metal run into a trench to form a thin bar which is then hammered and worked into a spear, etc. At the present time little smelting of ore is done. There are regular metalworkers, who make knives, etc., using a little hearth with goat-skin bellows, a crucible for copper and brass, etc., tongs, pliers, hammer.

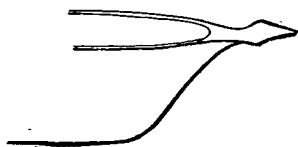


FIG. 15.

An iron plate with an aperture for drawing wire and files are also employed.

Bellows.—A goat's skin with a large opening sewn to two sticks ; the bag is then held by these sticks and closed and pressed, the air being driven out through an iron tube inserted through one of the legs of the skin.

BOATS.

The only form of boat in use is the dug-out canoe without outriggers. No skins are used. These are punted along by bamboo poles in the rivers. On the lake paddles are used, never oars. There are no sailing craft. The *mugona* is the tree used for making canoes, sometimes also the *mbawa*. They are cut out with a small adze, *sompo*. The *cheo* bush is used for caulking, twenty or thirty of the stalks being rammed into the hole. *Mpisa*, a ground-creeper, is also used after being pounded. For baling anything is used. At Likoma a vessel like a very small canoe called *upo* is employed. A kind of raft made from pith-wood and called *magumbwa* is used to fish from. Occasionally these get washed out into the lake and the fisher has been drowned.

The canoes vary in size from 10 to 50 feet and more, the smaller being used as ferry-boats across a stream ; the largest were made to carry slaves across the Lake Nyasa in the old days. In punting a canoe, one or two men work, keeping time. In paddling, any number may work, the largest canoes have twenty men working on either side. Down river near Zambesi the paddlers kneel ; on the Lake they stand.

When a number are working they take time from the front man, the rear man steering with his ordinary paddle. The passengers sit in the middle, a chief towards the stern. They never lose sight of land even in crossing the widest part of the lake. Stones are now used occasionally as anchors up the lake; grass houses are made to shelter canoes. The smaller canoes are 2 feet to $2\frac{1}{2}$ feet high, the very large ones used to be 4 and 5 feet high; except on the lower river, where canoes have ends similarly shaped, they are made with a bow more pointed than the stern and having a beak (Fig. 15). There is no ornamentation and no figure heads.

In every lake-shore or river-side village or collection of huts will be found one or more canoes; these belong to some one man, others using them paying a fee. At the launching of a new canoe, beer is made and the women dance, and medicine is made for its safe journey.

SWIMMING.

Not even all lake-shore natives swim, though most do. The art is learnt in childhood and not taught. They are not very fast swimmers, and I do not think could swim very far. They sometimes dive head first and practise staying under water. They swim rather like a dog, both arms coming a little out of water, but not a trudgeon stroke; arms are kept straight. They sometimes swim on the side, but never use the ordinary breast stroke.

GAMES.

Several games are played resembling the game of *ubau* introduced from Zanzibar (Mancala); *ubau* is played on a board in which rows of holes have been cut; beans are used as counters.

Mchombwa.—A game found among Anyanja and Machinga; it may be played on a *ubau* board, but is often played in holes made in the ground with stones. The Angoni game *chipalapasa* is played in the same way. At Fort Anderson is a lump of stone in which hollows have been made similar to those made in the ground. It is the only piece of stone-work I know in the country. Children and women play knucklebones (*mdodo*.)

A man tries in one breath to keep saying *mbiri-biri-biri* . . . , while another makes a pile of stones from another pile of ten, taking one at a time, saying, "To take and put it there makes one," etc. Men play at guessing in which hand an object is hidden, or one out of ten men sitting in a house has to guess with whom a certain object is. No forfeits.

Tandande (=the spider) is cat's cradle.

Tiali (hide and seek), one hiding, five or six seeking.

There are no dice games. Cards were introduced from the coast before the advent of Europeans into the country; the games are various and difficult to follow.

A slip-shod kind of wrestling is practised by Anyanja youths; the Machinga

wrestle thus: each man passes his right arm round his opponent's waist and grips his opponent's left wrist. When one has thrown the other, the victor spits on his hand, dips it in the dust and then smites his victim on the forehead.

The boys practise long jumping. Small boys make miniature bows and arrows, spears, etc., to play with; in their ways and frolics small children resemble European children exactly. Little girls play at dolls—they cut cucumbers into shape and dress them in calico cloth, carrying them on their backs and making pretence to suckle them.

The first words spoken by an infant are *ma* (*amai*=mother) and *ta* (*atate*=father); at two years *mama* and *tata* are words used; a word soon learnt is *toto*=“No! I don't want to.”

The only acting I ever heard of occurred when my own Machila men once acted a village scene, in which a woman (a man dressed up) while pounding corn was seized and raped by another man. At the right moment her husband and others rushed in and collared the man, who was condemned to have his head cut off; the execution followed.

DANCES.

The following is a list of dances; opposite each is the name of the tribe who dance it:—

- | | |
|---------------------------------|--------------------------------------|
| 1. <i>Chindimba</i> , Yao. | 13. <i>Litiwo</i> , Yao. |
| 2. <i>Likwata</i> , Yao. | 14. <i>Njeula</i> , Yao. |
| 3. <i>Utulu</i> , Yao. | 15. <i>Sukusa</i> , Yao. |
| 4. <i>Nteterenzi</i> , Mañanja. | 16. <i>Nsanja</i> , Yao. |
| 5. <i>Kunju</i> , Mañanja. | 17. <i>Nkonde</i> , Yao. |
| 6. <i>Timbwedera</i> , Mañanja. | 18. <i>Chibonde</i> , Yao. |
| 7. <i>Nkuwere</i> , Mañanja. | 19. <i>Mberuza</i> , Yao. |
| 8. <i>Kansengwa</i> , Mañanja. | 20. <i>Manganji</i> . |
| 9. <i>Mtseche</i> , Mañanja. | 21. <i>Sanji</i> . |
| 10. <i>Chilosi</i> . | 22. <i>Chimwiniwini</i> . |
| 11. <i>Vinyau</i> , Mañanja. | 23. <i>Masewe</i> , Mañanja and Yao. |
| 12. <i>Nkole</i> , Mañanja. | 24. <i>Mang'ambela</i> , Yao. |

1. *Chindimba*.—Danced at the *malvio* (mourning ceremony) generally inside the house unless a very large number of people are present.

All sit round and clap while one after the other men and women get up and dance in a rocking motion from one foot to the other, a small drum held against the chest; in former times a large one lying on the ground used also to be used—now two or three, standing on legs, are employed. When danced in the dead man's house, the body lies at one end of the room with the *Adzukululu* sitting by it. On one side are the wailers, and on the other the dancers, the dance being sometimes started immediately after death, sometimes the following morning and continued for three days.

This dance is also performed at almost any beer drinking.

2. *Likwata*.—A woman's dance (Scott's Dictionary states for men and women). The women dance in a ring, clapping their hands; no drums are played; each woman in turn advances into the middle, where there are usually four at a time. Here they turn round several times from left to right. When she has finished, she rejoins the ring passing in and out the others in the middle, a fresh woman taking 4's place and becoming No. 1 (Fig. 16). It is danced at any time after the burial ceremony is completed.

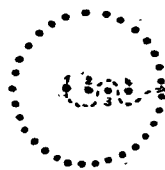


FIG. 16.

3. *Utulu*.—A woman's dance of recent introduction; danced any time. A carpenter from Blantyre staying in Majawa's village January, 1907 (Lake Nyasa), was found to be playing *chindimba* in a manner different from the usual fashion; his own variation he called *utulu*. About the same time a new dance had been invented by the women, and for want of a name they called it *utulu*, though danced to the same music as *likwata*, but with *chindimba* drums. The dance resembles *likwata* somewhat, but all movements are hopping, preceded by a few steps called *chanda-malai*.

4. *Ntetezezi*.—Danced by men only to the beating of four drums including *chinkango* and *mbalule*; one man dances at a time, shaking the loins while men and women sit on opposite sides in a row.

It is danced before and after burial sometimes, and at other times.

Mang'ambela.—An old Yao dance seen at Fort Johnson, 25.6.07. Four or five men attired in kilts made of dried palm-leaves with about twenty *masewe* on each leg. The four men do a continual kind of shuffling in line, the fifth, the *capitão*, from time to time telling the drummers to play quickly, does a very fast *pas seul* with jumpings and kickings, and then assumes some idiotic pose.

5. *Kunju*.—A woman's dance; the men look on.

6. *Timbwedera*.—Circumcision dance.

7. *Nkwere*.—Danced by men and women, sometimes in the funeral procession behind the mourners; big drums are used.

8. *Kansengwa*.—A small basket with stones and pumpkin seeds inside used to mark time with.

9. *Mtseche*.—Dress as in *mangambela*, may be danced in the funeral procession at the head of the procession. *Nkwere* following the mourners.

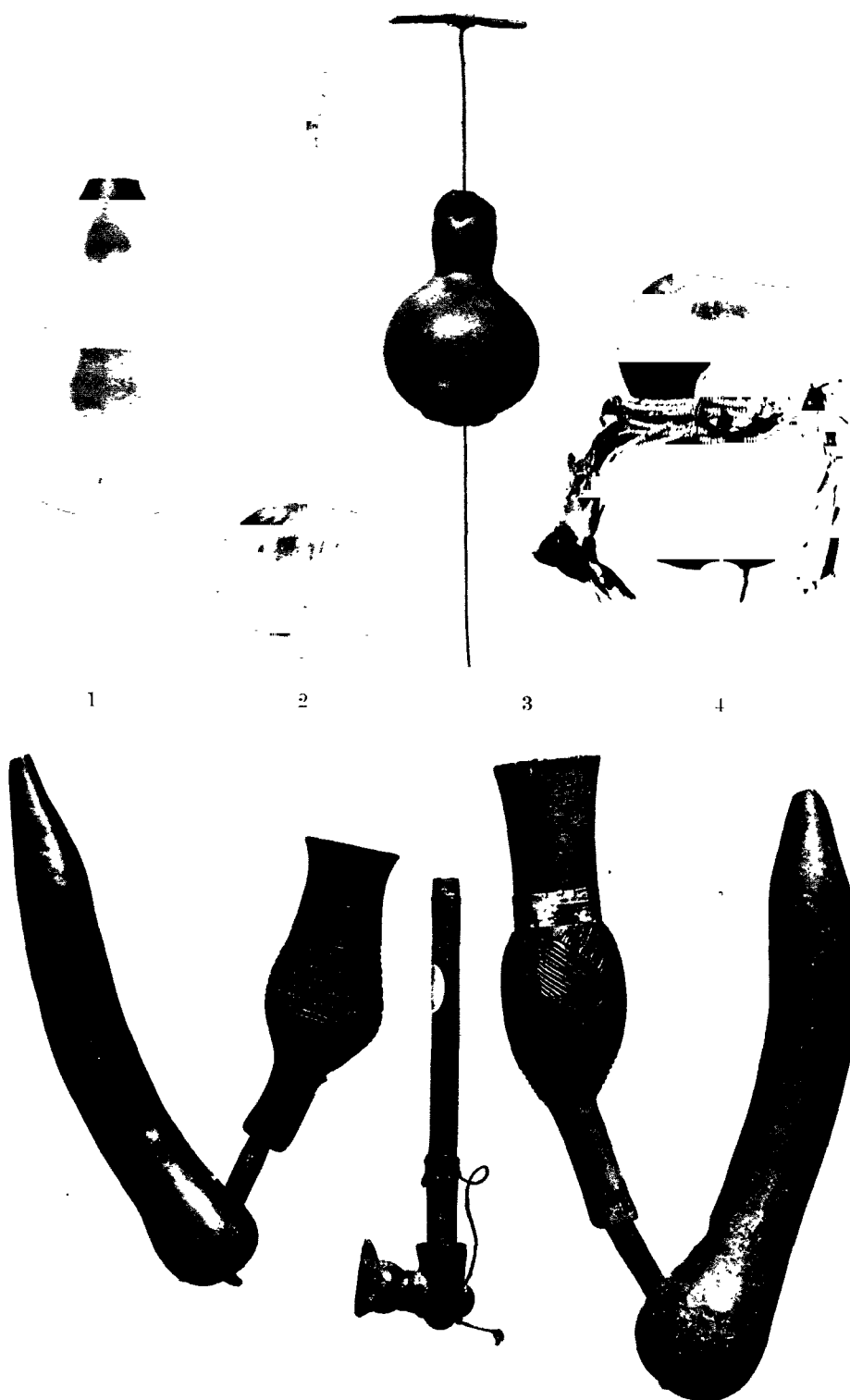
10. *Chilosi*.—Old men's dance started immediately after the death of anyone, and continued for two or three days while the body lies in the house.

11. *Chinyan*, *Zinyau*. ? *Vinyao*.—"A big dance" held after the death of some person. Only the initiated are allowed to be present, and "women who are foolish and would know nothing." Children are carefully excluded, and intrusions guarded against by posting men in the neighbourhood, anyone not being able to give the password was liable to be knocked on the head. Those taking part were said to constitute a society with a secret language, etc., and were only admitted after giving proof of bravery, endurance, etc.

The dance took place always on a dark moonless night usually quite late



SOME TRIBES OF BRITISH CENTRAL AFRICA.



SOME TRIBES OF BRITISH CENTRAL AFRICA.

and the feature of it was the introduction of life-size representations of animals made of bamboo and grass with men inside.

I once saw these at a *namwali* ceremony among the Awisa (*q.v.*).

12. *Nkole*.—Woman only present; danced on the occasion of a girl's first menstruation.

13. *Litiwo*.—Women only, on the occasion of the quickening with first child.

14. *Njeula*.—Men and women, a quick shuffling step while standing in a circle.

15. *Sukusa*.—The body shaking (shoulders) dance of boys, they walk round in a ring, some fifty of them, the drums in the middle; when the bass drum breaks into a quicker time they all start shaking shoulders and bodies with intervals for two or three steps.

16. *Nsanja*.—Danced in a circle, men and women alternately.

17. *Nkonde*.—A big dance with *sanji* rattles.

18. *Chibonde*.—Dancing boys dance.

19. *Mberuza*.—(1907) men and women; each carries a bango reed filled with pebbles—no drums.

20. *Manganji*.—A coast dance; palm leaf bags filled with pebbles are tied on the legs.

21. *Sanje*.—A *pas-de-deux*, each man with a rattle and head-dress; for a few moments they wander round each other picking up the time and tune, and then jump into a very fast step dancing and jumping into the air shaking the rattles.

22. *Chimwiniwini*.—A *pas-seul* by a man carrying a viol and bow with anklets of small sticks.

23. *Maseve*.—Danced no longer. At Mponda's village a big crowd used to dance with skins round the loins and wooden anklets: in their hands they carried live snakes which had been rendered harmless by putting medicine over their holes before digging them out. Four drums as in *chindimba* were used. The women all fled away.

Description of Plates.

PLATE XXVI.

- | | |
|-------------------------------|---|
| 1. Iron tube with human hair. | 2. Tortoise-shell containing "medicine." |
| 3. Leaf packet of "medicine." | 4. Tortoise-shell. |
| 5. Iron knife. | 6. Horn containing "medicine." |
| 7. Seed rattle. | 8. Bead amulet. |
| 9. Stuffed squirrel skin. | 1-9. Contents of the bag of an <i>Ulu</i> -man. |

PLATE XXVII.

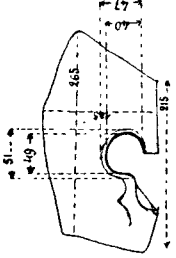
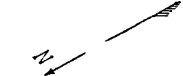
- | | |
|-----------------------|----------------------------|
| 1. Gourd vessel, Yao. | 2. Gourd rattle, Yao. |
| 3. Divining-gourd. | 4. Gourd for casting lots. |
| 5. Mañanja. | 6. Amachinga. |
| | 7. Awisa. |

ON SOME DOLMENS OF PECULIAR TYPES IN FRANCE AND ELSEWHERE.

BY A. L. LEWIS.

THE fifth Prehistoric Congress of France, at which I had the honour of representing the Royal Anthropological Institute, visited, amongst other objects of interest, four dolmens of a peculiar type in the Department of the Oise. These were all alike in plan, and differed but little in size or other details, except as to orientation. They are all chambers, between 20 and 30 feet long, and 4 or 5 feet wide and deep, lined, and originally covered with slabs of stone, and closed at both ends. In three of them the stone at one end is pierced by a round hole, not more than 18 inches in diameter, and carefully worked from both sides. In the fourth, instead of the single slab with a hole, two or more stones are so arranged as to make an opening. Outside these holed stones is an open portico or shrine, of which the holed stone forms the back, the sides being composed of two or more upright stones, and all being roofed in by one or more capstones, which stand at a higher level than those of the *allée couverte* behind them. The length of the whole structure is about 30 feet.

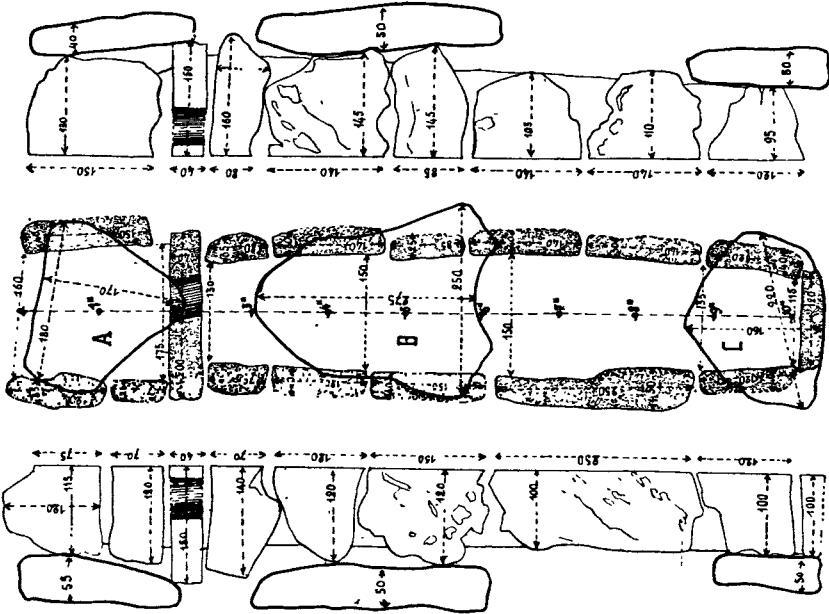
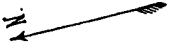
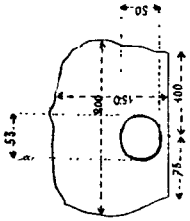
At TRIE CHATEAU, about four kilometres from Gisors, in a wood, are a menhir and a dolmen of this type. The menhir is 4 metres high, 2 metres wide, and $\frac{3}{4}$ of a metre thick (13 feet by $6\frac{1}{2}$ by $2\frac{1}{2}$), and is buried in the ground to more than half its height; but it has been dug round, and some animal bones were discovered during the excavations. The dolmen, which is about 250 metres from it, is of the type I have just described, the *allée couverte* being about 24 feet long, $3\frac{1}{2}$ to 4 feet wide, and 3 feet deep, but possibly deeper originally. It stands about 15° east of north and west of south. The stone at the south end and the capstones have been removed. Polished stone axes and human bones were discovered in or underneath it. At the north end the *allée* is closed by a single stone, 8 feet long, 1 foot thick, and 5 feet high, pierced by a round hole, not more than 18 inches in diameter, through which children were formerly passed to cure or preserve them from fever. On the north side of this stone are two others, each 5 feet high, at right angles to it, forming with it a portico or shrine, which is covered by a stone $12\frac{1}{2}$ feet long, 6 wide, and from 2 to 3 thick. This shrine faces to about 10° east of north, while that which I have to speak of next, LA PIERRE AUX FÉES at VILLERS ST. SEPULCHRE, faces about due north. This latter structure indeed differs from the other only in retaining two of the



Épaisseurs de la dalle
(par-dessus de l'entrée)
à droite, en A = 70 cm
au milieu, en B = 95
à gauche, en C = 85.

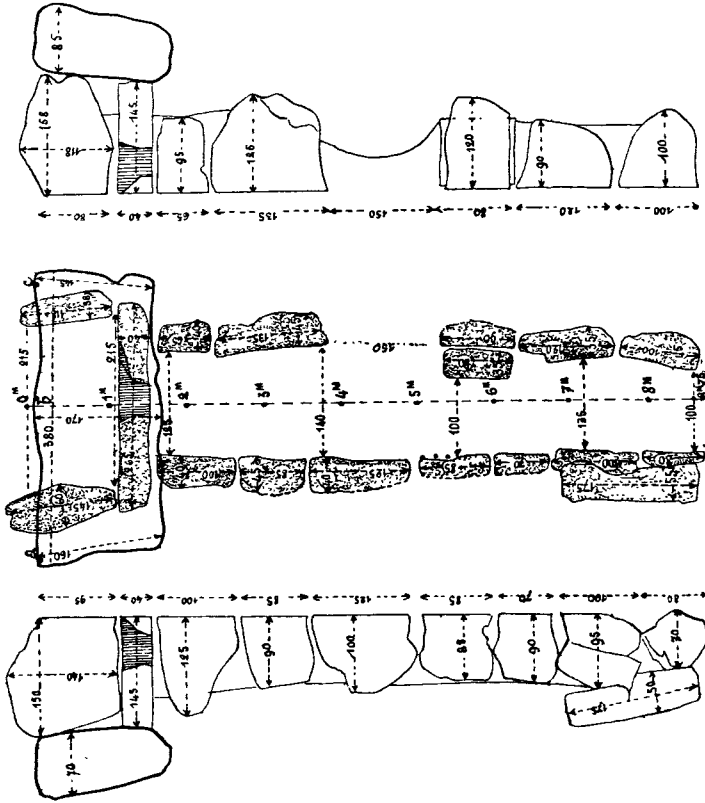
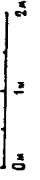
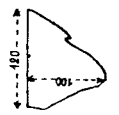
Épaisseurs.

dalle A = 55 cm.
dalle B = 50.
dalle C = 50.



DOLMEN DE LA
PIERRE AUX FEES.
Village St Sépultures
Oise.

Levé et dessiné
le 8 avril 1909
E. H. H.



DOLMEN DE LA PIERRE DES DRUIDES ou de TRIE-CHATEAU.

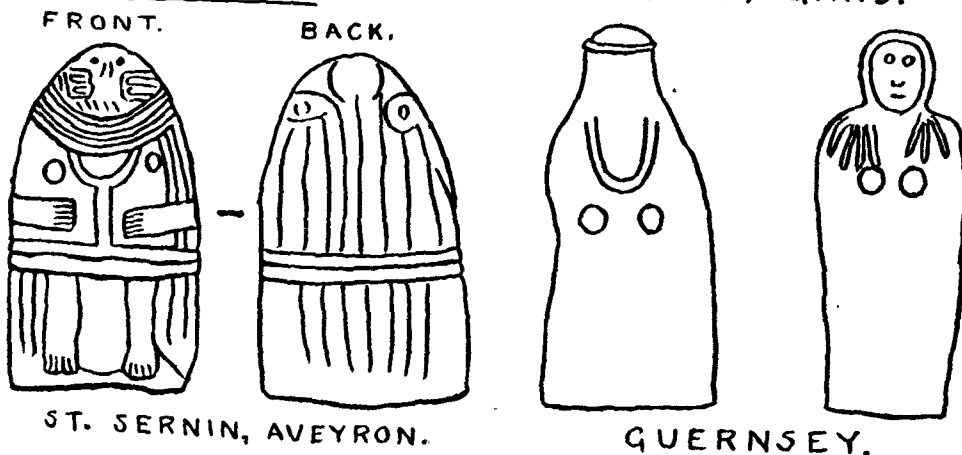
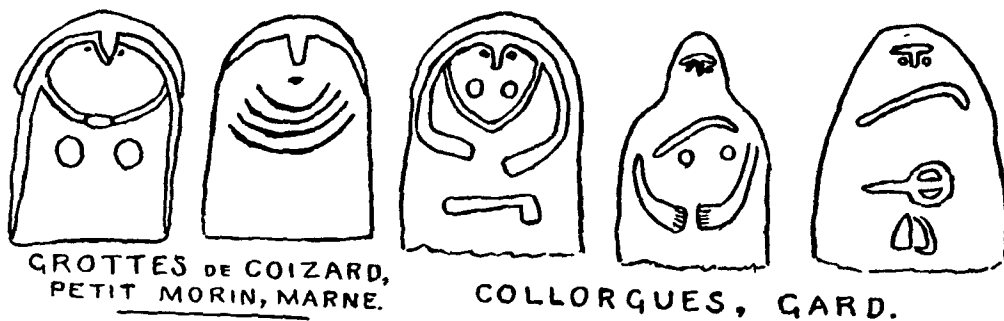
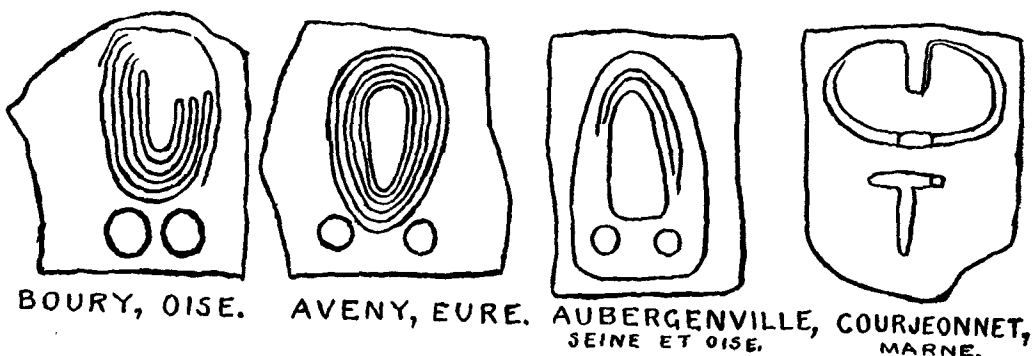
Érie-Chatteau, Oise.

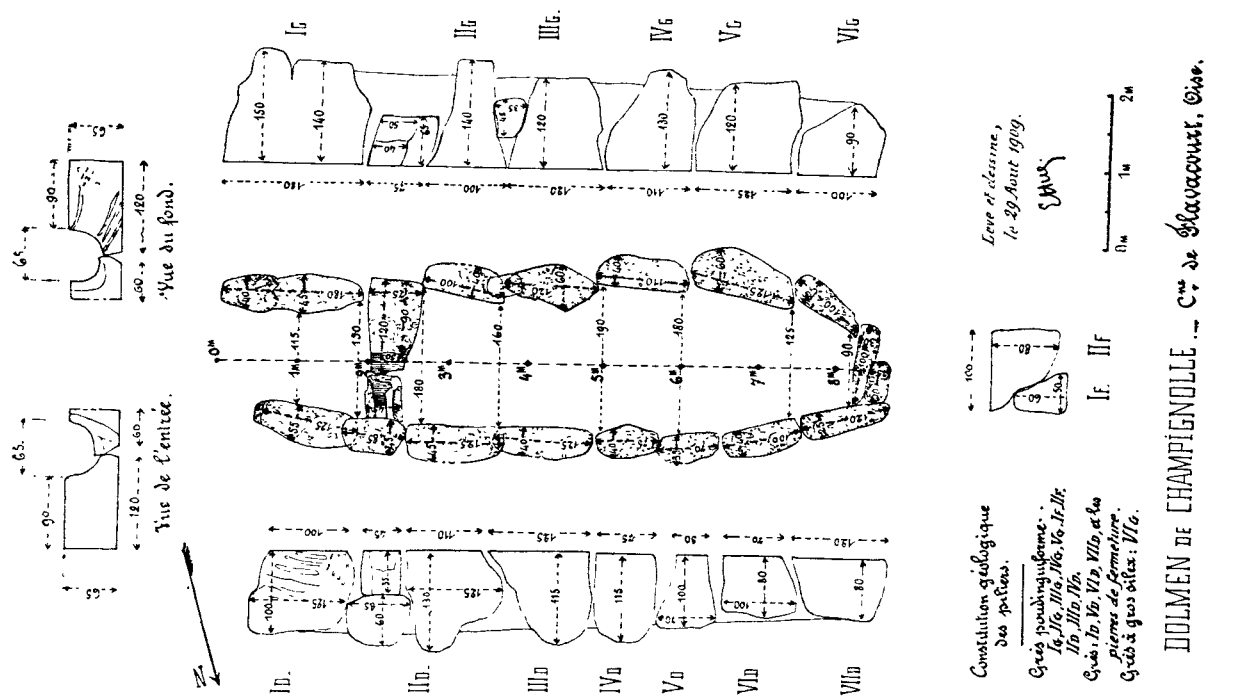
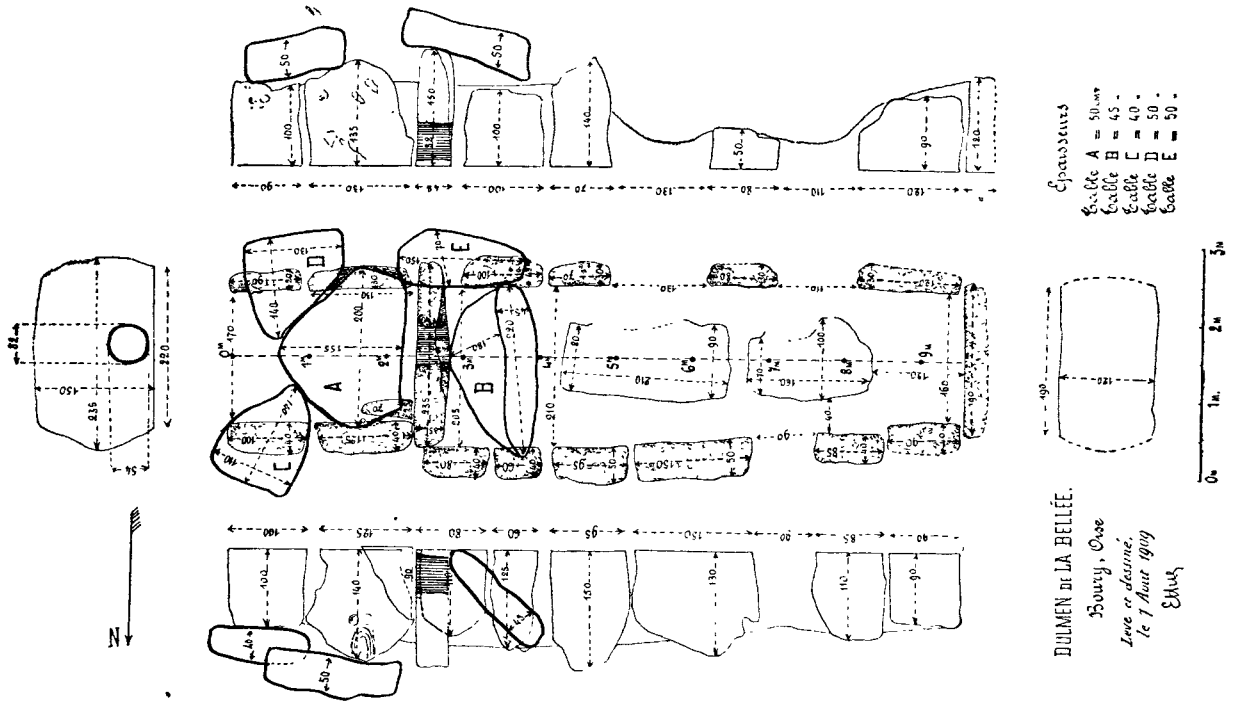
Levé et dessiné
le 7 août 1909
E. H. H.



capstones of the *allée*, and in some small points of measurement which I need not give in detail. Human remains and stone axes are said to have been found in it many years ago.

The third holed dolmen, the DOLMEN DE LA BELLÉE at BOURY, is of the same type and of almost the same measurements, but the shrine or portico faces 15° north of east, to a position in which the sun would rise twice yearly (probably about 1st May and 10th August), and each of its sides consists of two or three stones instead of one. Each of these groups of stones supports a small capstone, and the large capstone rests upon them instead of directly upon the upright stones. This arrangement may have been made only because of a difficulty in getting a stone large enough to cover the others completely, or there may have been some other idea involved in it. One of the roofing stones of the *allée* has





DOLMEN DE LA BELLÉE.

Bourry, Oise
Leve et dessin,
le 7 août 1909

Étude

Leve et dessin,
le 29 août 1909.

Étude

Constitution géologique
des pierres.

Graie porphyroïdique.
Ia, IIa, IIIa, IVa, Va, VIa, VIIa.
IIb, IIIb, IVb, Vb, VIb, VIIb et la
pierre de formation.
Gris à gros silex: VIIc.

DOLMEN DE CHAMPIENVILLE ... C^{te} de Beauvais, Oise.

fallen partly into it, blocking it up. The remains of ninety bodies were found in the *allée* with some stone axes, spearheads, and pottery, but nothing has been found in the portico.

The point of greatest difference between the Dolmen de la Belle Laye and the others is, however, the remarkable carving which is on the middle stone on the north side of the portico. This has been thought to represent a prehistoric goddess of a rather unpleasant description, who is associated with a stone axe (not the double-bladed Cretan weapon). The resemblance between this sculpture and a female figure is not very striking at first sight, but it becomes somewhat plainer on comparing the various illustrations collected by M. Salomon Reinach,¹ by means of which we see that these carvings represent merely the breasts and necklace of a by no means engaging female figure, more fully represented in other places. In one case we find a rudimentary nose, in another a nose and mouth without eyes, and in others noses and eyes without mouths, while some have arms and even hands and fingers. Most of these are carved on only one face of the stone, but in one instance the back of the stone is carved as well as the front. The collar or the breasts, and frequently both, appear on nearly all these extraordinary figures, and show the connection between those in which nothing else is represented and those which are more complete. Yet I think it can hardly be maintained that any of them are developed from others by a process of improvement, or degraded from others by unintelligent copying, as the Gaulish and British coins appear to have been degraded from a Greek original. It would seem rather that the sculptor and those for whom he worked found the slightest conventional attribute sufficient to bring their deity before their minds, and that, I suppose, suggests a considerable amount of intellectuality on their part. There are sculptured stones amongst the megalithic monuments of Ireland and also of Brittany, and on some of the latter stone axes seem to be figured; but, so far as I know, none of them exhibit those emblems of the goddess which we have been especially considering. Mr. Borlase, however, thinks that he finds traces of her in Irish tradition and folklore (*Dolmens of Ireland*, p. 579).

It has been said (*Builder*, 18th May, 1907) that "of six stones that remain of a line that ran parallel to a now destroyed tomb at Tamuli (Sardinia) three have breasts, as if to distinguish the sex of three of those buried in the tomb;" but the position of these stones, as shown by La Marmora and, after him, by Perrot and Chipiez in their respective books, seems to indicate that they had no connection with the tomb in question. They appear, in fact, to have been separate standing stones carved to a conical shape, some it would seem with breasts and others without, which may have marked individual burials of males and females, or may have had some phallic and non-sepulchral object. They do not seem to have anything to connect them, as might at first be thought, with the carvings in

¹ "La Sculpture en Europe avant les Influences Gréco-Romaines," in *l'Anthropologie*, 1894, p. 15. See also Borlase's *Dolmens of Ireland*, p. 576.

France, which are, moreover, directly associated with burial caves and chambers. It is desirable to make this clear in this place, because the Sardinian "Giant's Graves" will come before us from another point of view presently.

There are other dolmens in this district like the three which I have described with holed stones at one end of them, but I did not see them. The other to which I did go—the DOLMEN DE CHAMPIGNOLLES—opens a little north of east, to a point at which the sun rises perhaps twice during the summer. Dr. Baudouin has suggested that the orientation was to the sunrise of the day on which the work was begun. This dolmen differs from those previously mentioned in having the opening built or formed of separate stones placed together, instead of being cut through a single slab. One of the large stones at the front is also scored with deep irregular grooves, which are supposed to have been made by grinding or polishing stone axes. Pottery, stone axes and arrow-heads, and bone needles were found in the *allée*, together with the remains of fifty-five bodies. In the vestibule one bone needle, an axe, and some fragments of pottery were discovered. Eight hundred metres from it there is a menhir, $7\frac{1}{2}$ feet high, 6 feet broad, and 2 feet thick, buried to half its height, and it was by observing the bearings of this stone, as he has done in other cases with equal success, that Dr. Baudouin, the Secretary of the Congress, first found his way to the dolmen.

This dolmen with its built entrance may be compared with the better preserved and much larger "Pierre Turquoise," which I described in *Man* (1907, No. 74), and which is at no very great distance from it, and with others in Normandy, described by M. Léon Coutil in the *Proceedings of the Congrès Pré-historique de France, at Autun, 1907*.

On other occasions I have shown that great differences exist between the stone circles of different localities, and especially between those round Aberdeen, those round Inverness, and those elsewhere, though, with regard to this, I must now say that a small circle with a recumbent stone between two uprights, like those near Aberdeen, but without a central tumulus, has lately been discovered at Drumbeg, County Cork, by our colleague, Captain Boyle Somerville, R.N. (*Nature*, 29th July, 1909); but this solitary exception was, perhaps, set up under the influence of someone who travelled in prehistoric times from what is now Aberdeenshire to the south-west of Ireland, or the resemblance may be merely accidental.

As it is with the circles so it is with the dolmens. There are so many and so great differences between them that if dolmen-building were, as has been thought, a characteristic of race, it would have been not to one but to many races that the different types would have been due, but the different kinds of dolmens are so mixed and distributed that any such races would seem to have gone about from one isolated place to another, very much like so many draught-men hopping over one another's heads on to alternate squares of the board. This will appear more plainly if we look round to see where other monuments resembling these dolmens, with their remarkable round holes communicating with the interior, are to be found.

The first to occur to some may be the Men-an-tol, near Penzance, and it has in fact been suggested that that stone may have been a division with communication between two interior chambers, such as exists at "King Orry's Grave" in the Isle of Man, at Rodmarton in Gloucestershire, at Kerlescan, Carnac, Brittany, and some other places where, however, instead of the hole being cut through a stone, two stones are set side by side, half the circle being cut out of one side of each of them. I do not, however, think that the Men-an-tol formed part of a dolmen, because the other stones around it are pillar stones, such as are used in the circles in the district, and not broad slabs, such as dolmens are made of, there as elsewhere. Chun Quoit, which is not far off it, and is the most perfect dolmen in West Cornwall, presents an excellent example of the shape of stone generally used in the construction of chambers and galleries, but in other respects it is quite different from the dolmens of the Oise, being merely a large cubical kist, having, however, a narrow entrance at one corner, formerly blocked by small dry masonry which has fallen down inside it. The Men-an-tol was probably the central object enclosed in an ordinary circle of pillar-stones. Chun Quoit, on the other hand, is a dolmen of a type met with in many and widely separated localities. There are for instance numbers of dolmens in India not unlike it in shape which have holes in one of their sides, but these holes are too high up and too small for entrances for anything human except a ghost, being only from 4 to 9 inches in diameter.

Sir Walter Elliot reported to the International Congress of Prehistoric Archaeology (Norwich, 1868, p. 257) that dolmens of this type, some with and some without holes, were found in all parts of Southern India; and Colonel Meadows Taylor has recorded in the *Transactions of the Royal Irish Academy* (vol. xxiv, 1865) the existence of 2,129 in the district of Bellary, of which 1,110 had holes in one of their sides: he also described two groups in the Dekkan, each containing a large number; of these one, and one only, had two stones at right angles to the outside of the holed stone; many were open, three-sided chambers, with nothing in them or under them. All these Indian dolmens are old and are attributed to a race of dwarfs, and such human remains as are found in them appear to be of small size; but, as articles of iron and other metals are said to have been found in them, they are probably not so old as those of Western Europe, which therefore cannot have been derived from them, nor is it conceivable that any great race movement passed from Western Europe to Southern India 3,000 years ago—the period suggested by Colonel Meadows Taylor for their construction. If then the holed dolmens of Western Europe and India had a common origin the starting point of it must be looked for somewhere between the two, but it is perhaps most likely that the only community of origin was in the development of similar ideas among different peoples with regard to the manners, customs, and requirements of the dead, and that those ideas produced the same results in these widely separated countries. Such an identity of ideas may indicate a contact or influence of some kind, but does not necessarily point to a community of race.

At Plas Newydd, Anglesey, is a chamber in a mound with a stone closing the entrance, which had in it two round holes side by side, but these also were too small for anyone to pass through.

Open compartments or shrines at the end of long chambers, resembling those of the dolmens of the Oise in shape, but with the very important difference that they have no apparent communication with the interior, exist at Poullhan en Plouhinec in Brittany, in Antrim, described by Dr. Sinclair Holden in *Anthropologia*, and in other places in Ireland, described by Borlase. Dr. Sinclair Holden's "Giant's Graves" were surrounded by an outer enclosure of stones; he found charred human bones, flint implements, and fragments of sepulchral urns inside the *allée*, but nothing in the shrine or outer passage, and no trace of metal in any of them. Borlase notes one or two instances of possible openings from the outer shrine to the inner chamber in Ireland, but nothing like the round holes in the stones of the dolmens of the Oise. In Sweden however we find some which seem to be extremely like them; the difference in one case being that the *allée* widens toward the back instead of being the same width throughout, and in another that the chamber is much shorter, and, instead of a shrine, has an enclosure surrounding it, somewhat like those of the Irish "Giant's Graves"; the entrance also is a small archway instead of a round hole. The breasts and collar, the symbols of the goddess of the axe of the Oise, do not appear in connection with any of the other monuments I have been speaking of.

There are, as we all know, dolmens of various sizes, patterns, and ages, in Japan, in Corea, in India, in Palestine east of the Jordan, in Algeria, in Spain, in Portugal, and in some other places; but I will now only say a little about the so-called "Tombs of the Giants" in Sardinia, and that because they do in some particulars resemble the dolmens of the Oise, and also because a sort of connection has been suggested between them and some remains in Great Britain. They were visited by Count Albert de la Marmora about ninety years ago, and I think first described by him in his *Voyage en Sardaigne*,¹ from which many particulars and illustrations have been copied by Perrot and Chipiez (*Art of Phœnicia, etc.*), and by W. C. Borlase (*Dolmens of Ireland*). They were also visited by Captain Oliver, who published a short account of some of them in 1875. Dr. Duncan Mackenzie has investigated and described them quite recently, and his plans and photographs are no doubt more accurate representations of their present state than La Marmora's were of what he found, but so much destruction has been wrought by treasure seekers that a better idea of the appearance of these structures when complete may be gained from La Marmora's elevations than from any photograph. Perrot and Chipiez say "these tombs consist of a hemi-cycle, forming a kind of vestibule a large stela, and a grave varying in length from five to ten mètres and upwards, whilst the stela, never less and often more than three mètres high, is oblong in shape towards the upper extremity, and tends sometimes to narrow towards the

¹ The Bodleian Library contains the second edition in four vols., 8vo, with long folio Atlas, published at Turin, 1839-40.

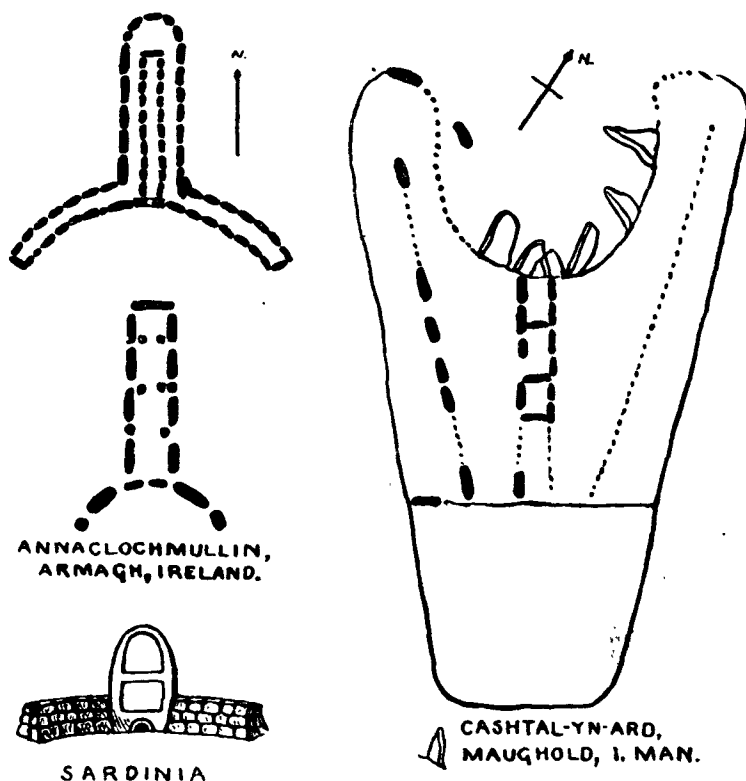
lower, yielding as nearly as possible the section of a truncated egg"; and—after describing the raised borders of the stela, and the round or square hole in it—"This doorway, small for a child, was the only means of communication with the vault, which was surrounded, sometimes by a low wall like the hemi-cycle, or by a double or treble row of juxtaposed slabs, fixed edgewise to the ground, forming a kind of passage about a mètre and a half broad, covered over by more massive slabs upon which a layer of earth was laid." Bronze weapons have been found in them. "They all point exactly ten degrees south (of east), the dead having their faces turned to the first rays of the rising sun." Dr. Duncan Mackenzie represents them as pointing mostly due south, one however pointing S.S.E., one S.E., and another W.S.W. The lofty stela, which was the specially distinguishing feature of the Sardinian tombs, was not, say Perrot and Chipiez, always a monolith, but was sometimes formed of two or three superimposed slabs; Dr. Duncan Mackenzie does not describe these at all, because since La Marmora's journey they had been removed from every one of the tombs that Dr. Duncan Mackenzie visited during his first expedition. Captain Oliver however saw one or two.¹ These large stelæ were thought by La Marmora to resemble some tombs in Alsace, but these latter consisted only of a stone trough or tray, from 2 to 3 feet square, surmounted by a sort of extinguisher cover about 3 feet high, and they could only contain ashes or broken bones; there was a round opening at the base of the cover, and in a picture without anything to show its size (Borlase, *Dolmens of Ireland*, Fig. 666), the cover does look rather like a Sardinian stela, but there is no dolmen or *allée* behind it, no frontal curve on each side of it, and no real resemblance whatever to the Sardinian monuments as a whole. Dr. Mackenzie having made a second journey to Sardinia and found some dolmens of a more usual type, is, I understand, of opinion that the "Giant's Graves" were evolved in Sardinia from the simpler form of dolmen; in other words that they were a Sardinian product, confined to Sardinia itself, and in this, so far as my information goes, I quite agree with him.

The Sardinian tombs have also been compared with the horned cairns at Yarhouse in Caithness, but I cannot say that I am much impressed by the supposed resemblance. To my mind the dolmen at Annaclochnmullin in Armagh, figured by Borlase, is much more like them; but before we jump to the conclusion that there must have been a connection between the builders of the Sardinian and Irish dolmens, we must remember that this particular example is but one out of nine hundred in Ireland, and that none of the others are like it; and, further, that the curved frontals both in Ireland and in Caithness were buried in cairns, the former to a depth of about 12 feet, so that any regular access to them was impossible, which seems to suggest a difference of cult and consequently of origin. This latter objection does not apparently apply to the chamber at Maughold in the Isle of Man, figured and described by Mr. Llewellyn Jewitt in the *Reliquary* of January,

¹ Figured in *Nuragghi Sardi*, etc., by Capt. S. Pasfield Oliver, R.A. Dublin, Carson Bros. 1875. See also the *Journal of the Anthropological Institute*, vol. iv.

1885, which indeed appears to me to resemble the Sardinian tombs more closely than any other monument I have seen or heard of ; but I suppose nobody will infer from that either that Sardinia was colonized from the Isle of Man, or that the Isle of Man was peopled from Sardinia. It may possibly have happened that a vessel from Sardinia did reach the Isle of Man in prehistoric times, and that its crew settled and died there, and were buried in their own fashion ; or that they landed to bury some of their number and that the survivors sailed away again ; but this monument is, I believe, just as solitary an example in the Isle of Man as that of Annaclochmullin is in Ireland.

To return to our starting point ; communication between the dolmen builders of the Oise and those of Sardinia would perhaps have been more difficult than between those of Sardinia and the Isle of Man, and there seem to be no connecting



links. In the south of France we have the 213 dolmens of the Lozère, described by M. Adrien de Mortillet,¹ of which many, if not all, were long chambers with an entrance at a considerable angle at one end ; and in the next department to the west, that of the Aveyron we find a great number of quite a different square type rather resembling Chun Quoit near the Land's End of Cornwall.² In the Aveyron

¹ *Les Monuments Megalithiques de la Lozère*, par Adrien de Mortillet. Paris : Schleicher Frères, 1905.

² Trutat and Cartailhac in *Transactions of International Congress of Prehistoric Archaeology*, 1868.

only dolichocephalic skulls have been found, but in the Lozère some very brachycephalic skulls have been discovered together with a few dolichocephalic and some of mixed or medium type (Borlase, p. 605). Farther north we come to the dolmens of the Côte d'Or, which are simple oblong chambers without any special distinguishing character, and going still farther toward the north-west we reach those of the Eure et Loir,¹ which, so far as my observation of them goes, are neither square nor oblong, but rather large square chambers with the corners rounded off, or of an irregular and more or less circular form. All these varieties lie between the Giants' Graves of Sardinia and the dolmens with the portico and hole in the Department of the Oise.

If from the latter we make our way towards those in Sweden, which resemble them more nearly than any others, we are confronted in Holland by the great Hunebedden—long chambers with their entrances in the middle of their sides instead of at the ends—in Germany by other varieties, and in Denmark by square chambers, more like those of the Aveyron, or Chun Quoit in Cornwall, or those of which no less than eighty-five, and indeed, within the memory of man, many more, seem to have existed formerly in one square mile round Carrowmore in County Sligo, Ireland.²

In Spain and Portugal again there are different varieties, but the greater numbers seem rather like those of the Eure et Loir in plan, while in North Africa the smaller square chambers, sometimes with small circles, predominate.

From a consideration of the subject as a whole it would seem then that the building of dolmens was not confined to one race and the building of circles to another, nor that there was any one race which originated and diffused both; but rather that megalithic construction was a phase of culture through which many races have passed, and which was developed in different ways, not only by separate races, but also, in very restricted localities, by different tribes, without regard to any racial differences or connections between them.

Another point is that, where a striking resemblance occurs between some monuments in quite different and distant localities, any real connection is perhaps more likely to have been due to the influence of some small party of adventurers, or even to one individual traveller, than to the movement of a whole tribe, nation, or race. These latter could only have moved slowly, and would have left traces of their migration all along that part of their route which was on land; but, even in the earliest times, there were many individual travellers, some as explorers, some as traders, some as prisoners or slaves, some who fled from justice, and perhaps many more who fled from injustice, possibly even some missionaries, and in the nature of

¹ *Journal of Anthropological Institute*, August, 1889.

² Most of these latter have been destroyed altogether, some are represented only by the circle of small stones which surrounded the chamber, and others by a dolmen which has lost its circle, but the almost universal type in this place seems to have been a square chamber with a small circle set round it, or with the appearance of one formed accidentally by the irregular masses of stone heaped round about it. In other parts of Ireland other types of dolmens prevail, and it may be that these were built by a colony from Denmark.

things these would none of them have been the least intelligent of their respective communities, and would therefore have been the more likely to exercise some influence upon any less civilised but friendly population amongst which they found themselves.

In conclusion I should like to say a few words about the probable objects and uses of such dolmens as those of the Oise, to which there was an entrance always open or easy to be opened. They were certainly used as resting places for the dead, but it has been suggested with respect to some that they were made first of all for some other purpose, and converted into tombs at a later period; that is possible, but it is difficult to prove. Others regard them as having been simultaneously tombs and shrines for the worship of their inmates, or places to



which the living resorted to obtain in dreams or otherwise answers to questions of importance. W. C. Borlase urges these points very strongly in his *Dolmens of Ireland*; at p. 439 he says, "the dolmen, no mere sepulchre made once for all and forgotten, but the goal of the pilgrim who sought the abode of the spirit—the ancestral shrine, at the porch of which the dead were communicated with, and the accustomed offerings made"; at p. 346 he says that a passage in an Irish manuscript, called the *Colloquy of the Ancients*, "proves that in the Middle Ages a tradition, then committed to writing, either from older manuscripts or from oral sources, existed with regard to the nature of the rites performed in pagan times at those places which were held sacred to the heathen mysteries; it would appear that

the cultus was that of the spirits of royal or famous ancestors, who were to be approached by pilgrimages made to their abodes accompanied by a residence of a certain duration—in this case three nights and days, throughout which period fasting was prescribed—within the spirit mansion itself; the spirits of the dead, who were doubtless conciliated by sacrifices, being thus approached and ‘fasted upon,’ as the term was, were supposed to respond to the prayer of the supplicants, to grant them what they desired, and to enter into converse with them.” Perrot and Chipiez (p. 52) take a similar view with regard to the Sardinian tombs and their holed stelæ, and I myself see nothing unlikely, but much that is probable in it. A French author, M. de Paniagua, has suggested to the Congrès Préhistorique de France (Autun, 1907) that the priests or medicine men who attended to the oracles at those places also lived in them; it is indeed quite possible that, during the long existence of these very numerous monuments, some of them may have been used in that way, and there are in fact reports that some have been inhabited in quite recent times, but it does not follow that they were originally designed for that purpose.

Finally, it is worthy of note that Borlase compares the Irish form of ancestor-worship to some of the Shinto rites of Japan, and that there are things that do occasionally seem to suggest a northern Asiatic connection amongst the builders of our rude stone monuments.

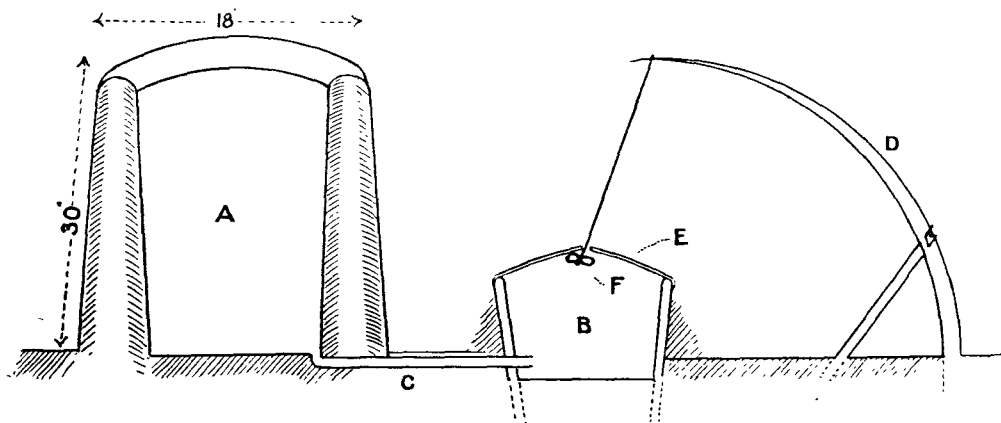
NOTES ON THE IRON WORKERS OF MANIPUR AND THE ANNUAL FESTIVAL IN HONOUR OF THEIR SPECIAL DEITY KHUMLANGBA.

BY LIEUT.-COLONEL J. SHAKESPEAR, C.I.E., D.S.O.

THERE are three villages in the state which manufacture iron : Kokching, Kokching Khuno (New), and Wairi. In the three villages there are 704 houses. These originally formed an endogamous group, but nowadays this custom is being broken through. The population is divided into families or *Sageis*, each of which is exogamous.

The people claim that their ancestors came from Cachar, whence their most important clan's name, Meyang langbam, Meyang denoting a foreigner from Cachar. The story runs that the ancestors of the Meyang langbam and Khettri mayum clan were one day walking near Thobal, and noticed some earth thrown out of a bamboo rat's burrow, which resembled that in which iron was found in Cachar, so they gathered it and on their way home they met the Raja, who asked what they were carrying, and, being told, ordered them to experiment and report the result. Eventually the community, numbering then only five or six households, was settled near the spot where the ore was found, and subsequently moved to their present locations, where the deposits of ore are more extensive. All these deposits are under the protection of an Umang Lai, *i.e.*, forest god, named Khumlangba, who has to be propitiated before the iron can be worked. When fresh ground has to be broken, a buffalo is sent by the Raja, and this animal is taken to the site of the proposed excavation, and in olden times was slain there, but since the introduction of Hinduism the animal is released and dedicated to Khumlangba, after a few hairs from each fetlock and the end of his tail, and a drop or two of blood from his ear have been offered to the Lai. Khumlangba is credited with the power of causing the iron ore to move about. One day it is found near the surface, the next it has disappeared only to appear again when the capricious god chooses. The presence of a deposit is detected by probing the soil with a long bamboo skewer, after heavy rain, when the ground is soft; if the skewer strikes something hard, a trial excavation is made. The deposits are near the surface, a pit seldom exceeding 9 feet in depth. Members of a party work together and the result of their labours is divided equally.

Smelting.—Two baskets of earth, weighing about 220 pounds, are treated at time. A piece of ground is smoothed and plastered with cow-dung and mud, on this the earth, after being thoroughly washed, is placed in layers with straw between each layer, and then burnt, after which the particles of ore can be picked out. These are then pounded.



A = Furnace.

There are two cylinders, B, each with a separate tube C, and spring D.

E = Leather cover.

F = Toggle.

The furnace A consists of a hollow cylinder of clay, from the bottom of which two bamboo tubes C lead to two cylinders, B, made by lining a slight excavation with stakes driven close together and caulked with mud. Each of these cylinders has a cover of buffalo hide securely bound on round the rim. In the middle of each cover is a hole, a piece of cord, with a toggle attached, is passed through the hole and held there by the toggle, the other end of each cord is tied to a stick securely buried in the ground and bent over so as to act as a spring and keep the cover always raised to its utmost. A layer of live charcoal is put into the furnace and the bellowsman takes his stand on the cylinders B, placing a foot over the hole in each cover and resting his hands on a cross bar. As he raises each foot in turn the cover is raised by the wooden spring and the air enters through the hole in the cover, as his foot descends the hole in the cover is closed and the air is forced out through the tube C; by moving his feet rapidly a strong draught is produced which soon raises the charcoal in the furnace to a great heat, and a little of the ore is then sprinkled on it. Charcoal and ore are added alternately, without any flux. About 45 pounds of ore are smelted, and then the furnace is extinguished and the iron extracted.

Forging.—The bellows used are the same as for smelting, the tubes being led through a hole in a stone, on the far side of which is a charcoal fire. An anvil is generally a stone. Five men are needed: one bellowsman; one fireman, to keep the fire in good order; two hammermen; one master, who manipulates the iron with a pair of pincers and is the expert, under whose orders the others work. He

receives eight annas a day, the others four each. The actual cash expenditure is very small, as the charcoal is manufactured from timber growing on the village lands, and the labour is mostly supplied by the partners in the enterprise. 220 pounds of earth are said to produce from Rs. 2 to Rs. 5 worth of manufactured iron articles, which if all the labour had to be paid for at market rates would cost Rs. 7/12/0. Formerly the people of these villages were not allowed to engage in any trade but iron making, and each worker had to give the Raja two pieces of iron 6 inches long and 2 inches thick every month.

The annual festival, or Lai-harauba, pleasing the god.—Khumlangba is represented by a piece of iron a few inches square. There are three such pieces, one in charge of each village, those in charge of Kokching and Wairi are said to have been brought with their ancestors from Cachar, that at Kokching Khuno was made when the village was formed from the mother village. Although there are three pieces of iron there is only one Khumlangba, and in reply to a question as to whether, if the piece of iron were stolen, the thief would carry off Khumlangba, I was told that Khumlangba would, of course, remain, as he always is a spirit, and would probably make things uncomfortable for the thief.

When a Lai-harauba is to be celebrated, the first thing to be done is to bring the Lai into a state of activity. Ordinarily speaking he is supposed to remain inert, unless offended in any way. Should a person without the approval of the Laisangba, hereditary guardian, cut a bamboo from the sacred grove, he would be made ill by the offended Lai, and if traders coming to the market steal anything and carry it off in their boats, he will pursue them and upset them. If a man be bold enough to make love to the wife of the Laisangba, Khumlangba will take up the matter and strike down the guilty couple. Even if the Laisangba turn his wife out for ill-temper or some minor offence, no man will dare to marry her, for fear of Khumlangba's wrath. Khumlangba, however, is said not to exercise any supervision over the morals of the rest of the community.

Khumlangba particularly affects two plants called Leisang Leirel and Langthei, and when he is about to be pleased the Leirangba, a specially selected official, has to fetch them, the former must be brought from the capital, the latter may be got on the spot. These plants are placed in Khumlangba's house on the first day of the pleasing. Thence they are taken in a brass vessel by the priestess down to the river which flows beside the grove. The old lady wades into the water, with the vessel in one hand and ringing a small bell with the other. On the bank her assistant priestess rings another bell, and in company with some male attendants chants in a low tone. Khumlangba's litter and its bearers waits beside them. The aged priestess moves slowly about in the water chanting and tinkling her bell. Suddenly she stumbles, falls, and after a moment emerges with the vessel full of water. Khumlangba has come. Sometimes the god is surly and will not come for a long time. The old lady now finds her way to shore trying her best to step joyously. The vessel with its precious contents is placed in a litter, and the bearers raise it on to their shoulders.

The penna players start a tune on their little fiddles, the drum beats and the fifers play, and the bearers essay to carry their Lai up to his house, but he asserts himself, they make a few steps forward, then come staggering back, they sway about, plunge forward again, reach the foot of the slope, but Khumlangba puts out his strength, and back they come staggering almost into the river, thus he plays with them several times, but finally permits himself to be borne up to his own place.

The Lai-pham, or god's place, is an open space, surrounded by bamboos and trees, at one end is an open shed in which a two-tiered carved wooden altar draped with red cloth on which the iron representations of Khumlangba and his wife Shija are placed, surmounted by brass head ornaments, the precious vessel is deposited beside them; at the foot of the altar are the brass vessels of the god, and offerings of fruit, flowers, and rice. Half-way up one side of the open space is the permanent abode of the Lai, a house of some size, with a verandah and a porch, but no windows. Sheds for the village officials run between this house and the open shed, and on the opposite side is a shed for their wives. The officials seat themselves in their appointed places, each on his mat, while their wives sit on chairs arranged from left to right in order of the seniority of the husbands. The drummer of the Lai takes up his position at the far end of the ground opposite the open shed. The Laisangba moves forward and kneels in front of the shed, all the officials rise and arranging themselves in rows behind him kneel and bow humbly to Khumlangba, the Laisangba prays at some length, and then the whole assembly bow their foreheads to the ground. The officials resume their seats and the sacred fire is made by drawing a band of cane swiftly backwards and forwards round a small log held under the performer's foot. A small lump of tinder having been ignited a fire is made opposite the shed and offerings of rice are laid in front of Khumlangba, the officials again come before the shed and kneel while another prayer is said, after which they resume their seats. A fish called sareng is singed slightly over the fire and laid before Khumlangba. This fish has spines in its head, and is chosen to represent the buffalo, which used to be sacrificed along with a pig before the advent of the "Brahmin with his scrolls and sanctities." If a sareng cannot be found, a prawn will do. When the sacrifices were made, the blood used to be caught on a stone and laid before the god. Even now a cock and a hen are killed at the conclusion of the Laiharauba.

The assistant priestess now comes forward, with a tray of fruit and vegetables on her head, and moving slowly about in front of Khumlangba's shrine invokes the gods of the four quarters, Khobru, Thangjing, Wang Purel, and Marjing, and then various other deities of hill and dale and the Imung Lais, the guardians of the hearth. Her invocation ended, the tray of vegetables is placed before Khumlangba, and for the moment the ceremonies cease. Later in the afternoon there is a grand dance.

The unmarried girls wear a special and most becoming dress. The head-dress consists of a crown ornamented with small gold tinsel pendants, from the sides of this chaplet plumes of peacocks' feathers stand up. Over each ear is a pendant

of various glittering objects, a loose veil of very fine muslin is worn over the shoulders, the body is wrapped in an embroidered cloth, the skirt is of green silk and reaches to within an inch or two of the ground; a foot from the bottom, all round is thickly studded with little looking-glasses and spangles; a broad band covered with silver spangles hangs in front from the girdle. The married women wear their usual dress, adding only a fine muslin veil over the head and shoulders, but the *phanek*, *i.e.*, cloth which answers for bodice and skirt, is new and of brighter colours than one sees ordinarily, perhaps chiefly due to the newness.

A procession is formed, the head *Maibi*, or priestess, with a man carrying *Khumlangba's* sacred *dao*, with three blades on either side of her, leads the way followed by the second *Maibi*, with an umbrella bearer on one side and a fan bearer on the other, two more fan bearers follow them, parallel with whom on the left move two *penna* players and two fifers. Then follow in ranks a large number of women and girls, the former on the flanks the latter two or three abreast in the centre. On their left following the *penna* players come a crowd of men and boys of fourteen or fifteen. This procession moves in circle from left to right, so that the men and boys are on the inner flank. The step consists of a hop, with body bent on to the left foot, right brought up to calf of left leg, slight pause, then hop on to right foot, and left foot brought up to right calf, again pause, hop on to left foot, and so on; as the right foot comes up to the left calf all clap hands. The step is much slurred by the women and girls, who merely bring one foot up to the other, pause and then continue the step, but the *Maibis* and menfolk hop with considerable vigour. The *Maibis* turn round from time to time, and sometimes taking hands dance round two or three times. One of the men sings praises of *Khumlangba* and the other performers sing the refrain "*Seyā nasidā*," which is obsolete Manipuri for "We are very pleased." The procession goes round and round many times, gradually the pace quickens, the hopping becomes more excited, the singer breaks into obscene jokes and abuse of the women, and is joined amid peals of laughter by all the men and lads; the women reply in a similar manner, and just when it seems that the ceremony is going to degenerate into a regular romp, the men break out of the ring and the women and girls form into lines facing the shrine behind the *Maibis* and their attendants and continue the dance. The step changes to a kind of valse; in this and in the circling dance great play is made with the hands and fingers. This dance finishes the ceremony for the day.

A *penna* is a fiddle, the head of which is a cocoanut shell, with a piece of thin leather stretched over it, the stem is of bamboo, the strings of horse hair, and the strings of the bow are of the same material. The bow has a handle of wood, with a curved metal head with many little bells attached to it, which tinkle as the bow moves. A bright-coloured banneret hangs from the stem of the *penna*. The village officials wear the peculiar head-dress so much affected by the Manipuris on gala occasions. A white turban is bound tightly round the head, and over the top and in front is wound round a *shumzil*, a horn-shaped construction of cane bound over with cloth or gold braid, and ending above in a loop and below in three

flat loops which are concealed under the turban. The *shumzil* is over a foot high and curves slightly backwards, from the loop at its end hangs an embroidered streamer. On each side of the head a plume made of peacocks' feathers and the tail feathers of the hornbill are inserted in the turban, and sometimes another such plume is worn behind, the upper end passing through the loop of the *shumzil*. The whole structure is bound together by a narrow band of red and white embroidery, wound round and round and tied under the chin with ends hanging down nearly to the waist. Cheap vests dyed various colours are apparently very much liked; a white cloth, with red embroidered border, is wrapped round the waist and thighs. Far into the night the sound of the drum tells that devotees are still pleasing Khumlangba with song and dance, but this is an unofficial performance. Every evening Khumlangba is replaced in his permanent house, and each morning brought and installed in the shrine called Yathok sang; on each occasion the officials of the village are present, and prayers are said. Khumlangba's servants are two Maibis or priestesses, old women whose fitness for the post is demonstrated by the Lai taking possession of them, throwing them into a species of fit, during which they babble incoherently. If a man is thus taken possession of by the god he is known as Maiba, and during all ceremonies of the Lai-harauba he wears the dress of a Maibi, viz., white cloth wound round the body from below the armpits, a white jacket, and a sash which is sometimes coloured twisted round the waist. A fine muslin veil is worn over the head. The Maibi is looked on as superior to any man, by reason of her communion with the god; and therefore if a man is honoured in the same way he assumes the dress of the Maibi as an honour. If a man marries a Maibi, he sleeps on the right of her, whereas the ordinary place of woman is the right, as being the inferior side. It appears that women are more liable to be possessed by the god, and the same may be observed among all the hill tribes of these parts. Among the Lushais the Khawhring, who "eats" other women, is also a woman, and the Zawlnei, who answers almost exactly to the Maibi, is almost always a woman. Besides the Maibis there are in attendance the Laisangba, hereditary guardian of the shrine and the god, a Maiba appointed by the village, who during the Lai-harauba is given four or five assistants. All these officials of the Lai live inside the Laipham throughout the Harauba only going out when the Lai himself goes, and their food is cooked at the sacred fire. The second and third days' performances are the same, therefore one description will suffice.

About two o'clock a procession is formed to convey the Lai from the Lai-pham to the village market-place, where a small cloth-sided shrine has been put up for him. The wives of the officials with their huge state umbrellas lead the way. Two tall banners with the figure of a monkey on each are carried, next followed by several little girls two and two in their dance dress, several pairs of small boys in disreputable attire come next; these children carry Khumlangba's brass vessels, fans, etc., then come men carrying dao and spears presented to Khumlangba by suppliants for his favour, then the old Maibi bearing on her head the brass vessel containing

the sacred flowers in which Khumlangba was yesterday persuaded to take up his temporary residence ; this is gaily decorated with orchids, two little girls attend her ; behind her comes the litter containing the sacred pieces of iron, each surmounted by a *shumzil*, which represent Khumlangba and his wife Shija. This litter is gaily decorated with peacocks' feathers and flowers and attended by fan and umbrella bearers. As the litter nears the shrine, Khumlangba sports with his bearers, driving them hither and thither, the litter sways to and fro as the carriers try to get it to the shrine, the umbrella and fan bearers strive anxiously to keep in their appointed places, one moment the litter is borne forward with a rush, then it suddenly stops and the carriers seem drawn backwards, stoutly but vainly resisting. At last the Lai graciously submits, and the litter is safely stowed in the shrine.

The officials of the village kneel before the shrine and the Laisangba says a prayer, then all resume their places, and pieces of grass called *lang*, which have been presented to the Lai, are distributed to all important people. On the first day orchids were similarly distributed, that was in the Lai-pham, but outside of it *lang* is the proper offering. These offerings are collected and burnt at the end of the ceremony. Now follow a series of dances before the shrine ; the two Maibis and the village Maiba commence ; the steps are various, much play is made with the hands, and there is constant turning round and advancing and retreating. After each dance the performers bow to the Lai, and then to the head officials seated on their mats, each under his own umbrella. The Maibis are followed by three men, then three pairs of men dance in succession. When the dancers are officials, their attendants stand near them and clap their hands in time with the drum. A boy approaches with an offering of parched rice ; he is from Imphal, and thinks it wise to propitiate the Lai of the locality he has come to. The Laisangba receives the offering, and lays it reverently in front of the shrine, the boy kneels down and a prayer is said, the second Maibi tinkling her bell the while. Then the wives of the chief officials of the village advance, and after making obeisance, dance in two lines, three in each line ; gradually the space behind them is filled with girls and women all dancing, advancing and retreating in lines. This goes on for a very long time, to the accompaniment of drum, penna, hand clapping, and singing.

The next dance begins with the Maibis attended by the two dao carriers and penna men, praying before the shrine, then dancing there with clapping of hands, then turning to the left they circle round the ground holding their hands, with their wrists touching, hands slightly apart level with their foreheads, as if holding up something. I am told this means that they are offering themselves to Khumlangba, the Maibis are supposed to be holding their souls in their hands and offering them to the Lai. Thus they circle twenty-six or twenty-seven times, holding the hands in a different way each time, and varying the motions. The various actions are to show that they owe all to Khumlangba, thus the hands held to head show that that is due to him, then placed at the corners of the mouth, that the teeth are his gift, then the action of spinning, that cotton and cloth come from

him, and so on. Singing men, married women, and girls gradually join in till the dance becomes the same as that performed on the first day. The last three rounds are very tumultuous, many young men and boys breaking into the circle, and between them and the women loud obscene chaff is bandied freely, with much laughter. Then the men and boys retire and the Maibis with attendants dance before the shrine, the women and girls dancing in rows behind them. A canopy of cloth supported on the fans and umbrellas is erected, and the head Maibi taking the brass vessel with the sacred flowers in it, places it on her head, and in company with the Laisangba, dances slowly round it from left to right, while the second Maibi alone goes round from right to left all singing, the Maibi and the Laisangba pass to and fro in different directions under the canopy, while the second Maibi and the village Maiba, pass special rolls of sacred cloth from one to the other over the canopy which is lowered for them. This is done several times. The four supports of the canopy represent the gods of the four quarters before referred to. The canopy is to protect the Lai, Khumlangba, and his wife while they play beneath it. The passing to and fro of the cloth is part of the play. The exact performance of this portion of the ceremony is of the highest importance, all performers must follow exactly the appointed path, and each action must be done at exactly the right moment. Finally, the Maibi and Laisangba dance under the canopy, and then bowing down to the Lai retire, and the dance is over. While the last portion of this dance was proceeding, one of the attendants began to dance wildly, and after going through most extraordinary contortions, reeling about as if drunk, he fell down and was dragged to the front of the shrine and placed there kneeling with his head on the ground, and remained there for some time shaking with emotion. Khumlangba had entered into him. The same thing happened to this man on three days of the festival, and he will probably be a regular Maiba by next year, and appear in Maibi's dress. On the next day the second Maibi became possessed. She danced wildly, staggered about shaking her head, for the Lai is supposed to sit on the head of his devotee, then she knelt before the shrine, and trembling all over, shaking her head, began a long series of babblings, which were said to be prophecies. The Raja had sent some cloths, and a head-dress for the Lai, and I had made a small offering of money, and these babblings were said to be the Lai promising us prosperity in consequence of our good acts.

The finale was almost the most interesting ceremony of all. The second Maibi put on a Naga cloth, and a Naga basket was hung over her shoulder. With a Naga hoe held up in one hand she proceeded to invoke Khumlangba, while the head Maibi, the village Maiba, three other men, and a man with only a loin cloth, who was said to represent a Tangkhul Naga, all with sticks in their hands, stood round. The invocation ended, the whole party form a circle and dance round striking the ground as if hoeing, and shout in imitation of Nagas working, then the village Maiba takes a little gourd from the second Maibi's basket, and standing before the shrine offers it to the Lai, making an invocation, after which the second Maibi, taking a packet of rice, wrapped in a plantain leaf, as Nagas carry food

into the fields, from her basket offers it to the Lai with an invocation. Then the gourd, which is supposed to contain rice beer, and some of the rice are offered to the other members of the party. The Tangkhul, who is the clown, causes much amusement by his antics, trying to avoid the attentions of the Maibi, who tries to force the food down his throat. The village Maiba then marks on the ground the imaginary area they have cultivated. This whole play is transacted three times. I am told that it may be repeated any *uneven* number of times. After the third repetition, all retire except the second Maibi and the Tangkhul. The latter takes one of his companions' sticks, and holds it across his own to represent a bow with arrow in position. The two performers now dance at opposite ends of the ground singing in turn, and advance and retreat, the Maibi evidently trying to catch the man, who fends her off and makes pretence to shoot her; this goes on for a long time, and the dialogue is evidently extremely amusing, though said to be highly improper. Finally the Maibi seizes the Tangkhul by his loin cloth and forces him on to his knees before the shrine, after which they dance together. Then all the officials gather before the shrine for a final prayer, during which all the boys of the village gather at the other end of the ground and raise loud shouts, with much laughter and gusto, evidently imitating the Hau-hau with which the Kabui Nagas greet someone whom they wish to honour. Khumlangba is now carried to his home, in the same manner as he was brought, but it is no easy matter to get him off the market-place. The litter bearers are driven in all directions, backwards, forwards, sideways; several times the fickle deity seems to have made up his mind to go, and drives his bearers forward at a fast run, then suddenly stops, backs, and finally makes off in the opposite direction. All these antics are signs of his being well pleased.

The following is the explanation of the dramatic performance. The woman dressed up as a Naga is Panthoibi, a goddess, who appears in several tales (*The Meithei*s, pp. 97, 99, 127, 128, T. C. Hodson). The comic man is Nongpok Ningthau, also referred to in Mr. Hodson's work. Panthoibi was once cultivating on the Nong-mai-Ching hill east of Imphal, when the Nongpok Ningthau came and said, "This is my land and my father's before me, be off, or I will shoot you with my bow and arrow." Panthoibi made love to him in order to get permission to cultivate the place; when she had fed him with all the food and drink she had, he said he would have none of her, but she seized him and insisted on his marrying her; eventually the persistent lady had her way, and the ceremony was performed before Khumlangba. Panthoibi is said by Mr. Hodson to have been the wife of Khaba and my informants admit this, but say Nongpok Ningthau took her, though it would rather appear that the taking was on the lady's side.

The third and fourth days' performances were the same up to the end of the Panthoibi farce, at the close of which the officials made their usual obeisance, and then all the engaged couples advanced in pairs, and each in turn danced before Khumlangba. It is the practice here for boys and girls to be betrothed at about ten to twelve years of age, but the marriage does not take place till the girl

reaches the age of puberty, and sometimes later. In the meantime the young man is treated as a son of the house, though living with his parents, and he works for his future father-in-law. The girls' dance is just the usual turning round and waving the hands, the boys' is more difficult, consisting of three hops forward on the right foot, turn round, three back again on the left, waving the hands and opening and shutting them with a rolling motion of the fingers, then with knees bent balancing on each foot alternately, hopping from one to the other, and turning round. The audience is extremely critical, and any awkwardness on the part of the performers is greeted with jeers and laughter. As the boy resumes his place he is met by friends who make him presents of pan and betel nut. This giving of presents goes on throughout the festival; presents are being continually taken to the performers, and friends send presents to each other by the hands of their children. When giving a present the giver bows to the ground, and the receiver returns the compliment. On the sixth day the ceremonies are the same as the fourth and fifth, except that in place of engaged couples dancing together the married people take the floor in reverse order of seniority, the officials coming last, and the Ningthau, or chief, bringing the dance to a conclusion. The seventh and last day the whole of the ceremonies take place within the *Lai-pham* enclosure, and to the dances are added exhibitions of strength and wrestling. I could not stay for these two last days, but hope before long to witness the last three days of the *Harauba* in the sister village, Wairi.

The advent of the Meyang-lambam is said to have taken place in the reign of Khagenba, about the beginning of the seventeenth century. It is evident that the immigrants were not Hindus, for the people of Kokching have only become Hindus quite recently, in fact there are still some old men who refuse to abandon their varied meat diet. Hinduism does not seem to have been introduced into Cachar till the beginning of the eighteenth century. I see no reason to doubt the story of the origin of the Meyang-langbam family, but in these three villages there are seven other exogamous families which form an endogamous group. It seems probable that these are descendants of people of the locality, who joined the Meyang-langbam in the manufacture of iron. Each family has its own Lai, who has to be "pleased" at intervals by members of the family, and those who have married into it. All join in the "pleasing" of Khumlangba. The ceremonies of the "pleasing" bear some resemblance to festivals celebrated by the hill tribes. Thus the carrying of Khumlangba about in the litter, is paralleled by the Mi-thi-rawp-lam, a feast of the Lushais, in which effigies of their ancestors are carried about, and in some respects the rest of the performance reminds me of the "Kut" feasts celebrated by nearly every Kuki-Lushai clan about this season of the year, and said to ensure good crops. At the close of the day's ceremonies, when Khumlangba was being borne back to his house, a man always raised a loud shout, "We have pleased Khumlangba well, may our crops be good, may all be well with us," and the whole crowd shout back, "Yes! "Yes!" The Naga costumes adopted in the Panthoibi episode are in keeping with Manipuri customs, and show how

close the connection between the Manipuris and the tribes round them really is (compare Mr. Hodson's remarks in *The Meitheids*, p. 4 *et seq.*). The parade of the engaged couples is not an actual part of the Lai-harauba ; it was explained to me that up till the prayer and obeisance performed by the officials at the end of the Panthoibi farce, every action and word was of importance, but that the obeisance and prayer closed the important ceremonies and the rest was unimportant, mistakes did no harm.

Where I have attempted no explanation I could get none, except the vexatious one, " It was the custom of our forefathers, how do we know its meaning ? "

ANTHROPOLOGICAL NOTES ON THE BANGALA OF THE UPPER CONGO RIVER.

(PART III.)

BY THE REV. JOHN H. WEEKS.

XLI. COVENANTS, OATHS, AND ORDEALS.

Covenants.—A great and constantly recurring quarrel between families and towns of equal strength is settled by the important persons on each side entering into a covenant of blood-brotherhood. The mode of procedure is as follows :—A *Molekaleku* or go-between is appointed and approved by both parties. As a rule he is an outsider of importance who has the *entrée* to the villages concerned. He selects an island or some other convenient spot as a neutral meeting place for the contracting parties, and he is pledged that the meeting shall take place without a renewal of hostilities by either party. This *Molekaleku* also arranges the terms of peace, *i.e.*, whether captives are to be retained or given up, and also whether goods, etc., taken should be returned or not. All the preliminaries having been settled the parties meet at the place and time appointed; and then a stick called *ndeko* is procured and carefully scraped, and these scrapings are mixed with salt. The contracting parties clasp each other's right hand with the *ndeko* between the palms; then some incisions are made on the arms and the mixture of *ndeko* scrapings and salt is rubbed on the cuts; each then puts his mouth to the incisions on the other's arm and sucks for a few moments, after which one of the contracting parties takes the *ndeko* stick and strikes the wrists and knees of the other, saying: "If ever I break this covenant may I be cursed by having my nose rot off." Then the other takes the *ndeko* stick, and performing the same ceremony calls down the same curse on himself should he ever break the covenant. These rites are accompanied by the drinking of much sugar-cane wine. The whole of this ceremony is called *Tena ndeko* = to cut the *ndeko* stick.

After making blood-brotherhood between the headmen of two towns there is a ceremony called *Bakia Lolelembe*, which is as follows: A *nganga* takes a palm frond, splits it and puts one-half of the split frond across the path between the two towns that have entered into the above contract of friendship. This is not only a sign that all past palavers are finished, but is also a fetish to punish anyone who breaks the treaty. It is firmly believed that the side that renews the quarrel will get the worst of it by wounds and death.

Blood-brotherhood is also practised when two persons are always quarrelling and neither is strong enough to gain an advantage over the other; so to establish good feeling between them their friends persuade them to *Tena ndeko*.

As already stated a disease (probably lupus) of the nose is the punishment for faithlessness in observing the oath of blood-brotherhood; but for breaking a simple oath or promise there is no retribution, but public opinion condemns such double dealings, and one who is noted for falseness will have his name put into an impromptu song at the village dances—this is much feared and has a deterrent effect.

Tena ndanga = to cut a token. This is done by two ordinary combatants, or disputants. A piece of stick, tin, or anything handy is cut and each takes a part as a token that all matters of dispute are finished between them, and he who again starts one of the old quarrels calls down a curse upon himself.

This *tena ndanga* is also used by the party who loses a case. He gives the cut token as an earnest of payment of the fine imposed by those who judged the case.

Oaths were very freely used by the Boloki in their conversation, and such liars were they that they felt it necessary to back their statements with *ndai* = I swear it. The commonest form of oath was *Tena Nkingu* = cut my throat, and this was always accompanied by the speaker wetting his finger and drawing it across his throat. *Nta Mama* = (by my mother), and *Nta Tata* (by my father) were very strong oaths and were felt to be binding on the user of them, otherwise disaster would follow if the statement to which they were attached was not true, or the promise which they strengthened was not fulfilled. *Bwele unko Mama* = (true certainly by my mother), and *Bwele unko Tata* = (true certainly by my father), are oaths not regarded as being so strong as the other two, but inferred that the speaker pledged himself that his words were true, otherwise his mother, father, or relative would suffer. *Ngambu* was a word used in calling on the "ordeal" to work and cause your fall if guilty, or on the fetish to work you harm if you are guilty of breaking its laws, or on spears and knives to wound and kill you if you have not right on your side. I heard this word used on many and various occasions and it was generally equivalent to "let me be accursed," if I have done this wrong.

There is nothing resembling an oath administered to witnesses, and there is no means of punishing a false witness, hence witnesses are rarely called upon to give evidence in a case, for no one on the opposite side, and no judge would accept their statements. In ordinary cases the judges must decide the palaver on their own knowledge of the affair, for they are fully in touch with all local matters, and only local cases are laid before them. In complicated cases they resort to the ordeals, which are as follows:—1. *Nka* (Lower Congo *Nkasa*) which among the Boloki is the outer reddish skin of the rootlet of a certain tree carefully scraped off. The mode of administering is the following (extract from *Folklore*, Vol. XIX, pp. 94 to 97):—

VI. A few days ago¹ I had the opportunity of seeing a rather complicated

¹ Written in 1894.

discussion and cross-accusation settled to the satisfaction of all the natives present by the parties concerned drinking, or rather eating, the ordeal.

The trial took place on neutral ground, *i.e.*, in a section of the town midway between the sections in which lived the parties concerned. The court house was a wide-spreading wild fig-tree that cast a shade over the whole gathered crowd, which formed an oblong figure. The plaintiff stood at one end with his supporters, the defendant at the other with his, and the two sides were occupied by neutrals and sympathisers. The case was as follows:—The plaintiff had two slaves who ran away and after some days he heard that these slaves had gone away in a canoe belonging to the defendant, so he accused the latter of aiding and abetting their escape, and wanted him to pay him for them. The defendant, on the other hand, wanted the plaintiff to pay him back a canoe or the price of it, as he said it had been stolen by the plaintiff's slaves. For three hours they discussed the matter and tried to arrange an amicable compromise. This, however, was impossible, as each wished to get the best of the bargain. From the nature of the case it was impossible to call witnesses, although many persons spoke on either side. At last it was decided that the parties should take the *nka* (ordeal drug). Each was so confident of the righteousness of his claims that he was willing and eager to eat a portion of the poisonous drug to support it. The plaintiff was a short, thick-set young man troubled with elephantiasis, and from that and his apparent nervousness he was greatly handicapped in the trial. The defendant was a tall, thin, wiry man about fifty years of age, who had, I think, often taken the *nka* before, and was inured to it.

The *nka* is the outer skin of the rootlets of a tree that grows up the Lulunga River—a tributary that enters the Congo River on the south some forty miles below the Monsembe district. It is very fluffy, and of a deep scarlet colour. Two *ngangas* prepared equal portions of the *nka*. There was about a dessert-spoonful in each portion. The accused had first choice, after which each doctor with the portion of *nka* in the palm of his hand took up his position by the side of his client, and at a given signal the portions of *nka* were simultaneously held to the mouth of the two opponents, and at the same moment they began to chew the drug. After chewing for a few moments each washed it down with gulps of sugar-cane wine.

After taking the ordeal, the men are allowed neither to sit down nor to lean against anything, nor even to touch anything with their hands. The *nka* given in the above quantity blurs the vision, distorting and enlarging all objects, makes the legs tremble, the head giddy, and gives a choking sensation in the throat and chest. In fact it gives all the symptoms of intoxication and a few more besides. The one who first becomes intoxicated and falls down is the loser, and the one who resists the effects of the drug and controls himself the longest is the winner.

About five minutes after they had taken the ordeal, a native doctor stepped into the centre with a plantain stalk in his hand, about 2 feet 6 inches long and 3 inches to 4 inches diameter. He flourished this stalk about a little, and then placed it in front of the plaintiff for him to step over. He went forward boldly, stepped over it, and returned to his place. This was repeated six times

without his feet once touching the stalk. The defendant had then to go through the same test, which he did laughingly, throwing his arms and legs about in all directions. This was done occasionally for the next thirty minutes, and the plaintiff (the accuser) began to show signs of intoxication. His steps faltered, his eyes brightened and glared, and it was with difficulty that he raised his feet over the stalk. Then the "doctor" began to mock him, pretending to put the stalk close to his feet and tantalizingly drawing it back. Forty minutes after taking the *nka* the climax came. The "doctor" threw the stalk to the defendant (the accused), who caught it in his hands and carried it to the centre, where firmly fixing his feet on the ground, he stooped forward and placed the stalk with both his hands in a straight line, then raising himself he went back to his place. The plaintiff then went to pick it up, but no sooner did he lean forward than a spasm of pain seized him, and he would have fallen had not a man, who for the last twenty minutes had followed him closely, caught him in his arms and quickly carried him to his house.

No sooner did the crowd of neutrals see the fall of one of the opponents than with a bound they jumped to their feet; and with spears and knives raised in the air they danced, shouted, and sang around the winner. Some rubbed dirt, others ashes, and others red-camwood powder on the fellow's face—a sign that he had won the case. They then hoisted him on the back of a friend and carried him home. He distributed four hundred brass rods among the crowd of his admirers, who said they had helped him to win his cause. He sat outside his hut all the rest of the day with his face smeared, so that all could see he had won, and could congratulate him. The plaintiff had to pay him two slaves and a canoe as damages.

The next day both accused and accuser were walking about the town, and seemed none the worse for drinking so powerful and dangerous a narcotic. They apparently had no enmity towards each other, but chatted freely and laughingly over the events of the previous day.

When one remembers the amount of corruption and bribery among these people; that the most familiar words on their lips are "lie," "liar," and that the most frequent question is, "Is it true?" and the answer, "It is true or cut my throat,"—the wonder is that they can settle a palaver in any way.

To drink the ordeal and be either right or wrong according to its action settles the affair once for all, ends all possible deadly feuds and bloodshed, and saves many a man from what is worse than death, viz., an ever-present anxious fear of what his enemy or enemies may do to him. If a man accuses another of giving him a disease or of causing the death of his wife by witchcraft, how can the accused disprove such a charge? Not by talking, no matter how much he may swear that he is innocent. If he calls the chiefs and headmen together he knows the verdict will be given in favour of the one who pays the most; if he runs away he will soon be captured by some other town and probably sold to furnish a cannibal feast; if he runs to a friendly town he will lose caste, he will be treated with contempt as a coward, and his life be rendered miserable. So he boldly steps forth and takes the *nka* and the affair is settled. Is the ordeal in his favour? Then he claims and gets heavy

damages. Does the ordeal go against him? Then he pays the damages, if wealthy enough; or, if poor, sells himself; or, if a slave, his master pays for him. But whatever be the result, that palaver is decided once for all.

No stigma attaches to a man who is found guilty, for "one can have witchcraft without knowing it." Moreover, no one lightly brings a charge of witchcraft against another, for, if the ordeal test goes against the accuser, the damages are so very heavy as to deter frivolous accusations.

2. *Epomi*. 3. *Mokungu* are both trees. The juice from the bark of these trees is pressed out and dropped into the eye of the accused, and if the sight is destroyed the accused is guilty. The *epomi* juice is more powerful than the *mokungu*. The *nka* and *epomi* are for witchcraft and serious charges of theft and adultery, and the *mokungu* is used only in more trivial charges. In each case the accused can refuse to submit to the ordeal unless the accuser takes it with him, hence the two latter are rarely employed, but the *nka* is frequently employed by the accused and the accuser. When a *nganga* accuses a man of being a witch, the accused cannot demand that the *nganga* should take the ordeal with him.

4. Another test is as follows: Three boys are accused of thieving, which charge they indignantly repudiate; three young plantains are cut—one to represent each boy—and the juice of the *mokungu* is pressed into the centre of each plantain stump left in the ground. Now when a plantain is cut it will in a few hours send up from its centre the beginnings of a fresh growth, but if one of the three plantain stumps does not begin to sprout afresh by the next morning the lad represented by that plantain is the guilty one, if two do not sprout then there are two thieves, and if neither sprout then all three lads are regarded as guilty. On the other hand if all three sprout they are proved to be innocent of the accusation. The *mokungu* juice destroys the eye, so in mercy the "eyes" of the plantain are used as a substitute for the eyes of the lad, and it is probable that the juice when well pressed in retards the sprouting of the plantain.

5. *Lingola* is a word denoting the giving of the *nka* to a medium (*moyengwa*), and after a certain time, when the ordeal begins to work, the name of a man who is supposed to be the witch is called out, and if the medium stumbles over the plantain stalk put in his path, while this name is "on the card," the owner of that name is guilty; but if the medium does not stumble the man is innocent, and another name is called and the process is repeated until the witch is found or the effects of the drug have passed away from the medium.

6. *Mai ma mungunga*=water of the bell. This is used by a witch-doctor called *Nganga ya mungunga*. A person is very ill and charges his family with bewitching him. They deny the accusation, and he thereupon challenges them to drink the water dipped in the *nganga's* bell, which will not hurt them if they are innocent, but will kill them if they are guilty of the charge. Anyone who refuses to drink from the bell is regarded as guilty.

By frequently drinking the *nka* one becomes immune from its effects, and I have noticed that old people, who had taken it many times, never fell intoxicated

by it, but young people fell quickly, from its effects on their system. I have no doubt that the administrators of the various ordeals were open to bribery and other influences, and could and would dilute the ordeal for one in whom they were interested.

By the ceremony of *tena ndeko* the contracting parties did not become blood brothers in the ordinary sense, but simply declared peace and a wiping out of all old palavers up to date. I have known the blood-brothers fight over new quarrels that arose later.

XLII. TABU.

The ramifications of tabu are to be found in every part of the life and thought of the Boloki native. They touch every kind of food, every place, and every action. There is not a single article of food that is not tabu to some one, there is not a place that has not been tabued at some time or the other, and there is not a possible action that has not been or is not affected by tabu. The tabus are many and various, but most of them will fall under the following heads:—

1. The totem tabu or *mokumbu*. This is not so evident to the casual observer among the Boloki people as it is in other parts of the world. One family that I knew could not eat a certain snake, and another could not eat fowls. If the men of these families killed or ate their totems they would become thin and weak, and the women would not only become thin but sterile, and a pregnant woman who broke the totem tabu would be delivered of a weak child who would remain thin and undersized all his days. To another family the *mwenge* (tree with small edible fruit) was a totem. The tree could not be cut down, nor the fruit eaten, and if by any mistake a woman of this family burnt it while pregnant she had carefully to save the ashes (*i.e.*, instead of throwing them away she had to put them in a special place), or her child would be born thin and weakly. After puberty the youths of the family could not eat the *mwenge* fruit. Another family had the *nkungu* (plant with large red leaves) as a totem. When a woman of this family became pregnant for the first time a *nkungu* was planted near the hearth (in the open air) and it was never destroyed, otherwise the child would be born weak, thin, and remain very small all its life. The healthy life of the children and the family was bound up with the healthiness and life of the totem as respected and preserved by the family. The killing of a fowl by a member of a snake family did not affect the members of the fowl family, and so on in the different totems.

A woman brought her totem with her when she married, and observed her own totem and that of her husband. A child born to them took the totems of both parents until there was a council of both families, the paternal and maternal branches, and then it was generally arranged that the child should take its father's totem.

Connected with some of the totems there is a spirit called *boweya*, and this *boweya* is common to these totems and presides over the interests and health of all the members of the families that respect these particular totems. In such families there is a dance on the fifth day after confinement, when the ceremony of piercing

the ear takes place. On the fifth day the women of the village gather and rub camwood powder on themselves, decorate their body with leaves, and tie on sashes of *nkokolemba* (creeper with small leaves), and dance for a considerable time to the sound of drums, then the lobe of the right ear of the child is pierced if it is a boy, and the left ear if it is a girl—the left is always a token of inferiority. This ceremony takes place always during the morning, and is a sign to the *boweya* spirit that that child belongs to a family in whose totem he is specially interested. The pierced ear indicates to the spirit that the owner has a claim on its help and protection.

2. *Ngili* or permanent tabu. This is a tabu that is put on any kind of food, as, "You must not eat goat's flesh"; or an interdiction not to go to a certain place, as, "You must not go across the river to a particular island"; or a prohibition not to perform a certain action, as, "You must not drink native wine except through a reed, and never straight out of a vessel of any kind." This tabu must be carefully observed by the person under it as long as he lives or dire consequences will follow the breaking of it, such as a return of the sickness from which the person suffered when placed under the tabu, or a loss of property and life, or the sickness and death of a child. Every kind of food is *ngili* to some one, and it was no uncommon sound to hear a person going through a town crying out: "Exchange for a piece of antelope." That meant that some one had come into possession of a piece of antelope to whom that animal was *ngili*, so he was trying to exchange it for fish or something else that was not *ngili* to him, with some one to whom antelope was not *ngili*. There was, whether through tabu or not, a very strong aversion to milk and raw eggs. To drink milk or eat a raw egg rendered the person unclean for several days, and he was not allowed to eat with his family until the uncleanness or *bosoto* had passed away. They could and did eat well-cooked eggs no matter how savoury through age they might be at the time.

Very frequently this *ngili* becomes an inherited tabu. A man has, say, elephantiasis, and the medicine-man says he is not to eat either elephant or hippopotamus meat, and he will pass this *ngili* on to his sons, who will carefully observe it lest their legs become swollen like an elephant's.

3. *Mungilu* or temporary tabu. The *mungilu* covers a large number of different circumstances that call for a tabu, according to the views of life taken by the native. During pregnancy a woman is placed under a tabu, generally that she is not to eat a certain kind of food—not the same article of food to every woman—and this she observes until the *nganga* removes it either on the birth of the child, or when it is weaned, or the first time it has its hair cut. Some pregnant women were told not to throw the ashes of their fires away until their child reached the age of 12 or 14. The ashes were always carefully gathered into a heap and put into a special place. These, however, belonged to families who had trees or shrubs for totems, and for fear of scattering the ashes of their totem trees, inadvertently burnt, they had to put all the ashes of their fires in a special place, honouring all ashes to avert being disrespectful to the ash of their totem tree.

Men engaged in making fishing and hunting traps were under a tabu not to have sexual intercourse until they had been successful in catching something and eating it. (*See* notes on fishing and hunting in *J.R.A.I.*, xxxix, p. 459.) Those undergoing the rites of circumcision must not eat either the heads or tails of fish until they are quite healed.

Sometimes a man in a rage will put himself under a tabu. A wife by her conduct has irritated him beyond endurance, and at last he strikes on the ground with a stick (*bete mobondo*) and says: "May I be cursed if ever I eat food cooked by you." He is now under a *mungilu* not to eat food from that woman's hands. This as a rule brings the woman to her senses, and after a time she prevails on her husband to remove the tabu. Men and women, to exhibit sympathy with their sick parents or near relatives, will make a vow saying, "I will not eat fowls," or, "I will not go to *Lulanga* until my father is better." Should the said father die then the person who made the self-imposed *mungilu* must not eat any more fowls, or must never go to *Lulanga*.

Again, a *nganga* may say that on account of a certain sickness the patient is not to eat such and such food, and the food he may eat must be prepared in a particular way. This is called *Kila mungilu* = to prohibit, tabu, etc. However, when the man is better a feast is made (*lamba epunza*) and then all kinds of food are prepared in the ordinary way, including the interdicted articles, and the patient who was under the *mungilu* partakes of them, and this is *kilola mungilu* = to reverse, or remove the prohibitions.

There is a custom that almost amounts to a tabu. A man who has killed another in a fight must not reply to a greeting until he has received a *Bonkani* = a congratulatory present for his bravery, etc., in the fight. At a drinking bout others may not receive their bumpers of sugar-cane wine until after the brave warrior has received his share of the drink.

A person may therefore be under four tabus, viz., 1. The totem tabu. 2. The *ngili* tabu because he has had a serious illness and desires to avoid a relapse. 3. The inherited tabu to avoid a complaint from which his father suffered; and 4. The *Mungilu* tabu.

A woman never had sexual relations with her husband from about three months before confinement until the child was weaned, *i.e.*, from twelve to eighteen months. It was believed that if this prohibition were not observed the child would sicken and die. Men never ate with women, as it was considered beneath their dignity to do so, and it was regarded as very immodest for women to eat in the presence of men. They always took their share of the food round the corner of a house out of sight of the men folk.

Bokilo means mother —, daughter —, brother —, father-in-law, sisters of mother-in-law, brothers of father-in-law, wives of wife's brother, and in fact any relation-in-law. *Bokilo* is a noun derived from *kila* = to prohibit, tabu, etc., and indicates that all bearing the relationship of *Bokilo* can have no intimate relationship with one another. It is highly probable that at one time they were

not allowed to speak to each other. It is certainly regarded now as incest for any persons bearing the relationship of *Bokilo* to cohabit with one another. A son-in-law may not look at a mother-in-law, and a daughter-in-law must not look at a father-in-law. When absolutely necessary they may sit a little apart with their backs to each other and talk. Some have told me that this is to guard against all possibility of them coming together, "For a person you never look at you never desire." Others have said: "Well, don't you see, my wife came from her womb." I am strongly inclined to think that the former is the real reason. Sickneses, misfortunes, etc., are regarded either as the result of bewitchment or through breaking knowingly or unknowingly some tabu.

The names of the dead are freely mentioned a few weeks after death, and such names are even passed on to children if there is any likeness of the child to the deceased, and some natives have a misty idea of the possibility of the re-birth of the deceased in the child who bears his likeness.

XLIII. RELIGION.

Mongoli is the name given to a disembodied spirit, and *Elimo* is the name of the embodied spirit; but directly the *Elimo* leaves the body it becomes a *mongoli*, and in the following paragraphs this distinction must be borne in mind. Immediately after burial the *mongoli* visits *longa*,¹ the nether regions, and after an indefinite period it returns above ground, and if it is the spirit of a man whose family originally came from the bush, then the *mongoli* haunts the forests, the bush, and the farms; but if it belongs to a member of a riverine tribe then the spirit haunts the river, creeks, islands, etc. The bush folk are buried in mats; but the riverine people are buried in coffins made of old canoes. Is it because their spirits go to live in the water? The Boloki folk are a riverine tribe and are proud of it, and scorned those who trace their origin to the "bush." These *mingoli* (plural) look after the *liboma* (see section on reproduction) to keep them supplied with children, and at times they take upon themselves various forms, as that of a crocodile, hippopotamus, etc.—the latter being the more common form, and as such it visits the town and eats and drinks what has been placed ready by its family. Sometimes these *mingoli* can be heard as spirits walking through the forests, the noise they make is called *bic-bic*, and at times they visit the towns and cause a rustling in the grass roofs as though "searching for a place through which to drive their spears." The land and water are full of *mingoli*, hence the timorous folk are afraid to travel at night. Certain *nganga* can see these *mingoli*, and, if they are mischievous, they pretend to capture them and confine them in saucepans and calabashes. Men also become the mediums for these *mingoli* to make communications to the living, generally to the advantage of the medium.

These *mingoli* sometimes take possession of a hippopotamus, and visit the towns on the river's bank, and when that occurs the family to whom the *mongoli* is supposed

¹ In Sec. XL of a previous article in the *Journal*, vol. xxxix, p. 449, *Longo* should be *Longa*.

to belong puts a small saucepan of sugar-cane wine and a little food for its refreshment on its nightly visits ; and as the food and wine are both gone in the morning (there are plenty of dogs about), the natives assure me that the *mongoli* in the animal has partaken of them. On one occasion a hippopotamus came off our beach for a few nights. I could only hear it as it was too dark to see it, but on the chance of hitting it fatally I fired in the direction of the sound. I fired on two successive nights, and during the next day some natives came and told me that that particular hippopotamus was possessed by the *mongoli* of a member of such and such a family, and that the said *mongoli* had sent a message to the head of the family telling him that he was to inform me that I should only waste my bullets, as it was impossible to kill a spirit-possessed hippopotamus, and asking him to request me not to fire again, as he (the hippopotamus) only wanted peaceably to visit the town for his offering of sugar-cane wine and food. I told them I would have another shot or two, but they assured me that I should not hit it. They did not doubt my marksmanship, as they had seen me bring down many birds on the wing, and I scarcely ever went to shoot monkeys and guinea fowls without bringing one or more back with me. They did not doubt my skill with the gun, but they doubted the power of a bullet to kill a spirit-possessed animal. The hippopotamus never came again, consequently I had no further opportunity of testing the point at issue.

These *mingoli* are supposed to speak sometimes through the members of their own family, not always in the language of the present day, but in the archaic language known only to the old people. When the medium was a youngish man, that is, one not familiar with the ancient language, he would then make his statements in the ordinary lingo, but with sufficient of the archaic to lend mystery to the communication. The medium worked himself into a frenzy ; he would shout, tremble all over, his muscles quivered, his body undulated, perspiration broke out on his forehead, and foam gathered about his mouth, and his eyes rolled. When thoroughly under the spell of the spirit he gave utterance to oracles which were implicitly believed by the people. The following case came under my own observation :—

Bololi, the headman of his family, died and was buried in the usual way. Some time after his younger brother, Mangumbe, became subject to frenzies, during which his brother Bololi spoke his oracles through him. Mangumbe admired and coveted the wives of a certain man in his town, and he tried to buy them, and failing that to exchange others for them, but their husband refused all offers. One day Mangumbe worked himself into a frenzy, and when he was supposed to be under the sway of his brother's *mongoli*, he said : That a certain man (giving the name of the man whose wives he coveted) must get rid of his wives or they would encompass his death by a serious and fatal illness. Then Mangumbe went to a friend and told him to treat with the husband for the wives, and the husband, thoroughly afraid now of his wives, was quite willing to sell them at a cheaper price than Mangumbe had previously offered for them. By this cunning trick he became the owner of the women he wanted. Once Mangumbe wanted to buy my

armchair. I told him the price as a bit of information, as I had no intention of selling the chair. He doubted my word. I told him he held communication with his brother's spirit, and if he wanted to know the price of things in England he had better tell his brother's spirit to go there, learn all it could, and come back and tell him the prices of various articles. Mangumbe shook his head sadly, and said:—"His spirit cannot travel so far, it keeps just around this district only."

The people firmly believed that Mangumbe held counsel with his brother's *mongoli*, and when he acted as a medium they were quite willing to believe all he said. Ordinarily he was little respected by the people; he was of mean appearance, and of petty, shabby ways, and had no command over even his own people, and yet when acting as a medium in a *séance*, he was feared, obeyed, and his word accepted without the slightest demur.

It is generally believed that the *mongoli* of a good man, good according to the native code of morals, remained in the *longa* or nether regions, but the *mongoli* of a bad person was punished in *longa* and driven out. Then if it belonged to a member of a bush tribe it would inhabit the forests, bush, etc., and unless properly appeased by gifts, or conquered by charms, it would turn aside animals from the hunting traps and try to counteract all hunting operations. If the *mongoli* belonged to a member of a riverine tribe, then, after being turned out of *longa*, it haunted the river, creeks, etc., and did its best to hinder all fishing operations. Hence it was no uncommon thing, when a village was unsuccessful in its fishing, for the inhabitants to join their brass rods together to buy an old man or old woman—old by preference, because cheap, and throw him (or her) into the river to appease these water spirits. Hence, also, all the care taken by a fisherman to conceal his name while fishing lest a *mongoli* enemy should hear it and divert all the fish from his traps and nets.

According to the native idea these *mingoli* dwell everywhere, and are ever ready to pounce on any living person, and either carry their captive away, or inflict a disease on him, or kill him; and their life is one long drawn out fear of what the *mingoli* may next do to them, and their religion is a series of ceremonies, by *nganga* and charm, to control, circumvent, and perhaps conquer the *mingoli*. Fortunately, these *mingoli* are limited in the area of their operations, and can be deceived. The *nganga* can cork them up in their calabashes, can cover them with saucapans, and when necessary, if the fee is large enough, can kill them, or rather, destroy them. A man I knew well, was sick for a long time with some internal complaint, and after other means had failed to cure him, he was told by a *nganga* that he was troubled by a bad *mongoli*, and advised to go right out of the district beyond the sphere of the said spirit's operations, and there to remain until he was better. The man had no friends to whom he might have safely gone, so he left his house at dead of night, taking only two of his wives with him, and telling no one of his destination lest the *mongoli* should hear of it, and he went as far as he safely could from his own town and donned a woman's dress and assumed a female voice, and pretended to be other than he was in order to deceive the *mongoli*. This failed

to cure him, and in time he returned to his town, but continued to act as a woman ; and every time he ate or drank he first scattered a portion of his food or drink behind him for the spirits to eat, and eating he appeased. The food best liked by the *mingoli* is the heart of any animal boiled, minced, and mixed with cooked cassava.

The *nganga* can see the *mingoli*, and those persons who have *likundu* or occult powers can also see them. They are said to be like people in appearance, they come into view, pass, and are lost to sight like ordinary beings. They have quiet voices, and eat *muntondo* (monkey pepper, *amomum*), and drink sugar-cane wine ; but if *likilikindi* and *eteko* (stems of the *amomum*) are put across a path the *mingoli* cannot pass over them. It is a curious exception that these spirits may eat the fruit of the monkey pepper, and yet cannot step over the stalks of the same plant.

Elimo is the word for an embodied spirit, *i.e.*, a spirit that possesses a human body. In dreams this *elimo* visits the scenes viewed in the dreams, and no matter how quickly a dreaming person is aroused the *elimo* can always return in time. With regard to dreams, some people believe them, and bad dreams are accepted as omens to warn them from going on journeys, and from fishing and hunting expeditions that would either be fruitless or disastrous. If a person faints or becomes unconscious, massage with water is used, and on the patient reviving it is thought that the *elimo* has returned.¹ The *elimo* travels about to bewitch people, and some of their charms are made on purpose to kill the *elimo* that wanders about as a *moloki* or witch. In careless speech the word *elimo* is used interchangeably for *moloki*, but the fuller and better form is *elimo ya moloki*, the spirit of the bewitcher. The *elimo* of a dying man escapes through the nostrils and mouth, hence these are plugged and tied immediately on death to keep the spirit in the body.

Elilingi is the third word, sometimes used as an equivalent for spirit. Its literal meaning is, shadow of person or thing, shade of tree or house, etc., reflection in water, or in a looking glass, etc., and more recently, a photograph. This word was often used interchangeably with *elimo* for soul. They would say that a dead person casts no shadow, so to say he had no *elilingi* was equal to saying he was dead, *i.e.*, he had no *elimo*. These two words were used frequently when speaking of the soul, and also of the shadow of a person, but *elimo* was never used of the shadow of a tree, animal, etc. They would speak of fallen houses and fallen trees as having no *elilingi*, *i.e.*, they cast no shadows—a sign that they were dead. If for some reason a man did not see his *elilingi* reflected when he looked into some water he thought some one had taken his spirit away, and that he would soon die. Even if at midday he did not see his shadow, he would go to a *nganga*, who would make medicine so that he might recover his *elimo*.

Thus we have *mongoli*, a disembodied soul, a bush or forest spirit, a water spirit, whom it is necessary to appease with offerings of food, of trade goods and of human beings.

Then we have *elimo*, an embodied soul that leaves the body during sleep, and

¹ Cf. vol. xxxix, p. 454.

travels, visits people, and places, and performs actions. This, I think, is the only word they have for soul. Lastly, there is the word *elilingi*, a shadow, shade, reflection, which is used in a restricted way as synonymous with *elimo*.

Women are regarded as having souls and they are buried in a style that accords with their status in the town. Natives believe that the soul of a bad person suffers in *longa*; by a bad person is meant a disagreeable, unsociable, unobliging, greedy, rude, discourteous person. His ghost—*mongoli*—will return to trouble his whilom neighbours; and it is against his disagreeable qualities as a man that they have to guard now he is a ghost. There are many stories told about the doings of *mingoli*—their tricks and their modes of revenge.

Longa, or the nether region, is supposed to be somewhere down below. From many natives I have received the same direction accompanied by the same action, viz., they have pointed with their hands to the ground and have said, "It is down underneath there." In *longa* the conditions of life are similar to those in their villages and towns, with this exception that a man may be too high in the social scale to be punished on earth, but he cannot escape punishment in *longa* for the disagreeable qualities he has exhibited on earth. Within a few hours of an unpopular headman's death I have heard the ordinary natives laughingly say to one another:—"He is being humbugged and punished now." Who allotted the punishment and saw to its infliction I could never ascertain. They had no overlords on earth and did not expect to find such in *longa*. Juries of headmen were used on earth to decide difficult cases, and it is probable that juries in *longa* sat on cases and allotted the necessary punishment.

The firing of guns, shouting, wailing, beating of drums, and such noises are heard in *longa* and give warning of the approach of another soul. The louder the noise the greater is the anticipation of those in *longa* of seeing a great man arrive. The souls of the departed wait about the entrance to *longa* to greet the one about whose departure for their *longa* so much fuss is being made. Occasionally male slaves were killed and sent with messages to the deceased head of the family. Such a slave generally requested that the headman should remove his anger from his family and allow them to enjoy health and prosperity. It was after much sickness and many misfortunes in a family that such a messenger was sent. Only wealthy families could afford such a luxury as this, and the whole affair would be talked about all over the district and the family be greatly respected for this proof of their wealth. No doubt such a slave before his execution would and did receive many messages from members of other families to deliver to their departed ones; and such messages were accompanied with presents of food and wine and the last few days of the poor wretch were filled with feasting. There are indications that the sight of the *mingoli* was defective, but their hearing was very keen, consequently a man's name was never mentioned while he was fishing for fear the *mingoli* would hear and deflect the fish from his nets and traps. One would think that if a *mongoli* could see and recognise a fish, it could also see and recognise the fisherman. There are frequent gaps in their logic. Human sacrifices were buried in the bush or on the

edge of the forest (if the spirit to be appeased was that of a bushman), or were thrown into the river (if the spirit to be appeased was that of a riverine man), to gain the goodwill of a father or grandfather, but there was no ancestral worship, as beyond the fourth generation the ancestors were forgotten or accounted ineffective in their anger. These sacrifices had no regularity, but were always made when other means had failed to avert a calamity, such as the flooding of the river, or to bring a positive good, such as a large catch of fish.

A homicide is not afraid of the *mongoli* of a man he has killed belonging to any of the neighbouring towns, as disembodied spirits travel in a very limited area only, but if he kills a man belonging to his own town he will be filled with fear lest the *mongoli* should work him some harm. There are no special rites that he can observe to free him from those fears, but he will *lebe* or mourn for the slain man as though he were a member of his own family. He will neglect his personal appearance, shave his head, fast for a certain period, and lament with much weeping.

Abnormal events are frequently placed to the credit of the *mongoli* of a man recently dead. A few hours after the death of a young man whom I knew, a furious storm broke on the town, blowing down plantain trees and working great havoc in the farms. It was stated in all seriousness by the old folk that the storm had been sent by the spirit of Mopembe—the lad's name. We had for dinner one day the shoulder of an antelope, the history of which will further illustrate the above statement. Three days before we had that piece of antelope for dinner Mumbamba, an old headman, died. After his death his relatives came from various towns to mourn at his grave. On that morning three canoes of men and women were coming up river, with the object of expressing their grief at the grave, when they happened upon a large antelope caught in the grass of an islet that had lodged against a fallen tree in the river. The mourners dragged the antelope into one of the canoes, and gave Mumbamba the credit of sending them an antelope as an expression of his favour; thus *mingoli* can send evil and also good upon those who are left on the earth.

The following four names are used for God: 1. *Libanza*; 2. *Nzakomba*; 3. *Kombu*; 4. *Njambe*. These by many natives are regarded as the several names of one deity; others, however, ascribe to the different names various powers and assert that they represent different deities, *e.g.*, *Libanza* was the creator of all things; *Nzakomba* was the disposer of the hearts and thoughts of people, and even of animals, and was frequently used in a sense that could only be translated by the word *disposition*, and sometimes by the phrases, he has a good disposition, or, he has a bad disposition (*Nzakomba*); *Kombu* was supposed to be responsible for the creation of all semi-sane people, crooked sticks, deformed persons and animals, etc., a sort of apprentice deity who did not properly understand his business; *Njambe* was the destroyer, and all sicknesses and deaths, not due to witchcraft, were laid at the door of *Njambe*. The more common name is *Libanza*, and he enters into not a few of their folk stories. His name is never given to anyone, and neither are the other names by which he is known. It is very probable that the Boloki tribe in its many

wanderings has either absorbed other tribes and their ideas and names for God, or, in its contact with other tribes, has simply with generous broadmindedness accepted the names it found in use among them.

Nzakomba is the general name for God among the Lulanga people, who live about forty miles below Monsembe on the south, and between whom and the Boloki (Bangala) there was much intercommunication. Njambe in its form of Nyambi is the word for God among the Bobangi folk who, a couple of generations ago, lived on the southern bank of the Mobangi River at a point easily reached in shallow marsh canoes by the Boloki folk by means of the many creeks and streams that join the Mobangi to the Congo in that district. Njambe in its form of Nzambi is used throughout the whole of the lower Congo for God. Kombu is the name for God of another tribe, but among the Boloki branch of the Bangala tribe Libanza is known far and wide, and was used by us, rightly or wrongly, as the equivalent for God.

There are several folk stories that have crystallized for us their ideas concerning Libanza, and it is interesting to note that such stories are called *mabanza* (plural form of Libanza) and these contain a statement of some of the doings of Libanza, whereas their word for fable, parable, story, is *mokulu*. The common opinion is that Libanza lived on the earth, and was the first to go into the heavens. His origin, life and adventures, as told in their folk stories, are briefly as follows:—

Libanza's mother when pregnant (names of mother and father are not known) had a stomach that "reached from Monsembe to Mobeka," a distance of sixty miles, and when her time came she gave birth first to the elephants, and bush animals of various kinds, and to the different swarms of insects, and to the amphibia; then his mother told him to come out, but before doing so he told her to scrape her finger nails, and upon her so doing he threw out the spears, the shield, and chair covered with brass nails, and finally came out himself.

Libanza's father, according to a folk story, was trapped and killed while stealing some *nsafu* fruit for his wife; and he acquainted his wife of his death by causing a fetish horn he had left with her to overflow with blood. As soon as Libanza was born he enquired about his father and his manner of death, and set himself to punish the one who had killed him, which after a series of futile attempts he finally accomplished by slaying the one who killed his father.

This Libanza had a series of adventures. He changed himself into a lad covered with yaws, and permitted himself to be taken as a slave, and although he was laughed at for his smallness he killed more monkeys than his master, and thus commanded respect. After a time he started again with his sister on his journeys, when he and his sister were taken slaves on approaching a town. In the town they found the people pounding sugar-canes preparatory to pressing out the wine. Although ridiculed for being only a small boy, he asked and procured a pestle,¹

¹ These pestles are heavy clubs weighing from 25 lbs. to 30 lbs each, and are made of very hard wood.

and used it so vigorously that it broke, then taking a pestle in each hand he worked them with such force that they smashed, and thus he broke all the pestles until only one was left, and with that one he ran away.

Libanza and his sister Nsongo travelled together until Nsongo saw a man named Koloimoko whom she desired to marry, and refused to proceed with her brother. Nsongo showed herself to the man but he kept at a distance, and Libanza hid himself under a horn. After performing some tricks Libanza caught Koloimoko and brought him to his sister, but on a closer inspection Nsongo refused to have him.

They proceeded on their way and came across a bunch of ripe palm nuts, and Nsongo requested her brother to cut it down for her, but as he climbed the palm tree (to reach the bunch of nuts) the tree grew higher and higher until the crown of fronds was hidden in the sky, where Libanza at last arrived and alighted on the sky, leaving his sister on the earth below. Nsongo heard the thunder roll, and said, "That is my brother Libanza admonishing." Nsongo wished to ascend to her brother and sent for the *nganga muntontwa* (a clever bird), who told her to send for the Hawk and inform him that she desired to send a parcel to her brother, and then to tie herself into a parcel so that she might be carried up into the sky by the Hawk. She carefully followed the instructions, and at last arrived where her brother was living in the sky.

Libanza became a blacksmith. In the sky land there is a person who swallows folk daily and for this reason he was called *Emele Ngombe* or Ngombe the Swallower. When Libanza heard that Ngombe was a swallower of people he made an ingot of iron very hot by the aid of his bellows blower, *Nkumba* or tortoise, and when Ngombe was passing the smithy Libanza exasperated him by mimicking his voice. Ngombe asked, "Who dares to ridicule me?" and Libanza answered by saying:—"I am¹ *anjaka-njaka lokwala la lotungi Libanza* the brother of Nsongo." Ngombe went at him with wide extended mouth to swallow him, but Libanza heated the iron till it melted, and threw the liquid metal into the gaping mouth, and Ngombe fell dead.

It is not at all improbable that Libanza is the name of some great chief who delivered the people by his resource and courage from great peril and oppression, and around whose name have gathered many myths and to him is ascribed great magical power. In the original story much magic is performed to meet the various difficulties that arise, as changing himself into different shapes, making horns and saucepans move and speak, and resurrecting broken and dead animals. No moral qualities were ascribed to Libanza, but he was regarded as being very strong and very rich. When our steamer the *Peace* made her first journey up river, the Boloki of Monsembe told me that they thought it was "Libanza going to Stanley Falls (*singitingi*) to visit his sister Nsongo." They could hear the noise of engines, but as

¹ This is the full name of Libanza. It means: The one who makes things with force and noise and runs off with them, whose scraped finger-nails are tied with cane, he who is Libanza the brother of Nsongo.

they could see no paddles, they thought that "the river *mingoli* were pushing the steamer along." For some months after our arrival at Monsembe we were often spoken of, and called, Libanza.

The *Ba-likolo* was a tribe of folk who lived somewhere above, as their name indicated (*ba* = people and *likolo* = above), but up river and all the country east of them is also called *likolo*, and it is most probable that the word *likolo* in the above phrase had originally that meaning, and as they pushed their journeys higher and higher up river and heard of peoples like themselves still higher up they removed the *Ba-likolo* from a locality beyond their district to a place above them in the sky. The *Ba-likolo* folk are said to have tails, and are very fond of ripe plantain, and in the folk stories these *Ba-likolo* descend on the plantain farms solely to steal ripe plantain. There is also a legend that the Boloki people bought their first fire from the *Ba-likolo* in exchange for a young woman. Previously they cooked their food in the sun, or ate it quite raw. Besides the *Ba-likolo* there were mythical monsters called *bingenenge* (plural of *engenenge*) who inhabited the numerous islands, and had many heads but no bodies.

During the whole of my fifteen years among the Boloki people I only saw two small wooden images on the arm of one man, and those I easily bought for a few brass rods, showing he had no faith in them and no use for them. Consequently I would say that they had no idols among them. Nor did we find any form of prayer among them, no worship, and no sacrifices. Disease and death and misfortune were all caused by various spirits, and their *nganga* dealt with them in different ways according to the necessity of the case. (See Section "Magic and Magicians.")

Omens (called *yeto*, plur. *bieto*) were not the same to the different families. The landing of a hippopotamus in a town might be an omen of war for one family, and have no significance for another; a flood might be a sign of famine and trouble to one family and not affect another; a huge tree floating freely down river might be an augury to one town of sickness and many deaths, and be entirely disregarded by another town. To some if a snake during war time went in front towards the enemy it was a sign of the success that would attend their undertaking, but if the snake came towards them the omen was against them. To others, if the *muntontwa* (a small, lively bird with a long beak) flew towards the enemy the omen was in their favour, but if it flew from the direction of the enemy it was not to be disregarded or calamity would overtake them. To most natives it would be a bad sign if a man kicked his foot against anything in the road (*ta libaku*). Sometimes the strong-minded ones would laugh away the fears of those who were inclined to turn back if the omen were against them; but it more frequently happened that they turned *en masse*, glad of an excuse to postpone a fight, for I think very few possessed real, natural bravery. The persistent crowing of a cock at the wrong time was an indication of misfortune which could be averted by killing the cock. The *bieto* were many and various, and in addition to those already mentioned we must not forget that dreams were omens for good or evil as they were interpreted by the dreamer.

Under the section on Death and Burial will be found an account of the means taken to purify mourners.

The religion of the Boloki has its basis in their fear of those numerous invisible spirits which surround them on every side, and are constantly trying to compass their sickness, misfortune, and death; and the Boloki's sole object in practising their religion is to cajole, or appease, cheat, or conquer and kill those spirits that trouble them—hence their *nganga*, their rites, their ceremonies and their charms. If there were no evil spirits to be circumvented there would be no need of their medicine men, and their charms.

The following notes on spirits may be placed very applicably under this general head of religion:—

1. *Bwete* (plur. *mête*). Various serious sicknesses are supposed to be caused by the *mête*, and each sickness has its own *bwete* or spirit, hence *lela*, or debility and anæmia; *yambaka*, or rheumatism; *yombi*, or sciatica; *luwa* and *makwata*, forms of sleeping sickness; *nyankili*, or ague fevers, are not only the names of diseases, but also of the *mête* spirits responsible for sending them. They do not know from whence these spirits emanate, but the only way to get them out of the body is to set up for some of them an *etoli* stick and for others a saucepan of small sticks, and again for others a saucepan of medicine water. For *lela*, *yambaka*, *yombi*, and *nyankili* they erect an *etoli*—a stick about 4 feet long, peeled of its bark, shaped at one end and daubed with yellow pigment and marked with red and blue spots; for the *makwata bwete* they prepare a saucepan in which they put small sticks about the thickness of one's finger and 8 or 9 inches long; this was called *muntoka*, and the whole was spotted with yellow, red, and blue colours; for the *luwa bwete* a saucepan of bush water was placed, and the pot was ornamented with colours, and called *eboko*. These *etoli* and saucepans often had little shelters built over them which were coloured with various paints, and every time the owner ate he threw some of his food on the roof of his house for the spirits to eat. From time to time he poured some sugar-cane wine over the *etoli*, or into the saucepans. There was no idea of ancestral worship in this, but an appeasing of the spirits of the diseases. Not to make these offerings was to invite a return of the spirit or spirits back to the body of the owner, *i.e.*, to have a very bad relapse. I have known a man to have three or four of these *etoli* sticks and a saucepan. This either indicated that he had had several bad complaints or had had his one and only complaint diagnosed wrongly. Persons who had never suffered from these serious illnesses, and they were numerous, never troubled to prepare either a saucepan or an *etoli*. By some folk these *mête* spirits were called *biwawa* (sing. *ewawa*).

2. *Mweta* (plur. *mieta*). When there was much sickness in a family, not confined to a single member but a kind of family epidemic, it was said to be caused by a *mweta* spirit, left, or sent, by a deceased relative as a punishment for failing to observe some fetish law, or for not showing due respect for the deceased when buried—not having a proper ceremony—or for not keeping his memory alive by

occasional mimic fights, and the gifts of brass rods and slaves to the spirit of the departed one. Sometimes it was sent maliciously. These *mieta* when they are troubling a family can be driven into animals by the *nganga ya bwaka* and killed by him, and as a proof of his prowess he will exhibit a bleeding head and assure the family that they need no longer worry as he has killed the animal which was possessed by the *mweta*, and the *mweta* is punished, killed, and will not bother them again. Sometimes the *nganga* will drive the *mweta* into a saucepan or calabash and there kill it, or imprison it.

3. *Elimo*, see above in this section.

4. *Mungoli* „ „ „ „

5. *Ejo*, the spirit of wealth. The following are some of the statements respecting *ejo*. A man who wants to become rich pays a large fee to *nganga ya bwaka*, who then uses his influence with *ejo* on behalf of his client, who must in all future gains set apart a portion for *ejo*, and should he fail to do so *ejo* has the power to punish him. *Ejo* can assume any shape and entice a person down to the river, where it returns suddenly to its proper form and jumps into the river with the enticed person. This person is then either killed by the *ejo* or ransomed for a slave or his equivalent. How the ransom is paid no one seems to know. The one enticed is he who has not paid his dues to *ejo*. When a person has received the *mono mwa ejó* (*ejo* medicine or charm), and has become wealthy by his luck-giving power, he takes the nail parings and hair cuttings¹ of a woman and makes medicine with them, and the woman soon dies and her spirit goes to *ejo* as an offering for its help. He is said to *lekia nkali* (to pass her on as a gift or sacrifice to *ejo*). If one man is saved when a canoe is swamped, and his companions are all drowned, he also is said to *lekia nkali* or has given them to *ejo* to save his own life. Should a man be successful in fishing or trading without any apparent cause, and shortly after his success his wife falls ill and dies, he is said to have *lekia nkali* his wife to the *ejo* as an acknowledgment of his increased wealth. The ordeal is often taken to disprove these accusations, and marvellous stories are told about the wealth-giving power of this *ejo* spirit.

6. The *embanda* is said to be a very short dwarf spirit, which when it takes possession of a man enables him to throw his enemy in wrestling and overcome those who try to hold him. It strengthens the legs of its owner and weakens by pain the legs of its owner's opponent. He who possesses the *embanda* spirit is always successful in capturing one or more prisoners in a fight, and can cause the death of many in any family he hates. The *embanda* is sometimes called *mopoto*.

7. *Jando ja nkoli* (spirit of a crocodile) and *jando ja nkoi* (spirit of a leopard). It is believed that persons can become possessed by one of these spirits, and are said to let themselves loose occasionally to prey on their neighbours. The word *jando* also stands for the peculiar characteristics of the animal to which it is

¹ For this reason a person always hides his or her nail parings and hair cuttings, as "powerful medicine" can be made with them to the disadvantage of the owner.

prefixed, *i.e.*, a man successful in fishing is said to have the peculiar qualities of a crocodile, and one swift and cunning in fight and flight has the qualities of a leopard. These qualities or spirits are not gained by eating either of the creatures, but are bought from a *nganga* by some occult intercourse with the crocodile and leopard.

8. *Nyandembe* is the name of a mythical person or spirit who is mentioned in the folk stories as having caused the death of Libanza's father, and was eventually done to death by Libanza as a punishment. He is thought to have been very strong and rich.

9. *Engenenge* is a mythical monster inhabiting the islands and is represented as having many heads and no body. He is greatly dreaded by those who have to camp on the islands during fishing and travelling, and they tell many stories of his visits to them.

10. *Elimimija* is a ghostly apparition, a spectre seen on the land in the twilight and moonlight. It may be a tree, or some leaves, etc.

11. *Esika*, same as number 10, but seen on the water.

12. *Bingbongbo* are the spirits of the unborn children in the *liboma*. They can make boys and girls thin and weak, and have to be appeased with feasts.

Perhaps under this head of religion is the best place to write about their dances, especially as they are more or less connected with their superstitious rites. There is a *boweya* dance in some families on the fifth day after confinement when the ceremony of piercing the ear of the new born child takes place. In these families, although their totems are different, yet they have a *boweya*, or spirit (see above), common to them, and the piercing of the ear is a sign to the *boweya*, or spirit, not to hurt them as they belong to the families under the patronage of the totems, and the pierced ear is a proof of their claim. On the fifth day, the women of the village gather and rub camwood powder on themselves, decorate their bodies with leaves, and tie on sashes of a special creeper. They dance to the sound of a drum. The lobe of the right ear of a male child, or the left ear of a female child is pierced—the left is always a sign of inferiority. This ceremony always takes place in the morning.

Jebola is only danced by Boloki women. It is supposed to be the result of obsession by a *mongoli* spirit. It is not confined to any particular class or family of the Boloki tribe. A woman comes under the influence of the *mongoli* and begins to dance, and the dancing continues for seven days, during which time she may not eat anything except powdered camwood, and a light clay called *emolo*, and sugar-canes. While the *jebola* is on her, she goes from village to village dancing, and receives large sums for her exhibitions. A headman will sometimes hire her for a day to dance before himself and friends; and if a man is mourning the recent death of his wife, he will engage her to dance in her honour, and I have known them to give nearly the price of a slave as payment. At the end of the seventh day the women who have previously been *jebola* will take her to the river and immerse her, and then she will return to ordinary life. The *nganga ya jebola* looks

after her and her interests during the seven days, and sits up with her at night, as she is not supposed to sleep during the time of her obsession.

Muntembe, from *ntembe* cassava stems. If a woman dies who has been held in much honour by the other women in the town as a good farmer, and one who has taught them about farming, and under whose leadership they have been successful in their operations, they will, a few days after her death, form a procession, decorate themselves with leaves and twigs and dance and chant her praises through the town, and will then go to the farm and hoe up and plant a large bed of cassava for the use of the deceased woman's family. The family supplies the dancers with sugar-cane wine for this festivity.

Mungwana is a dance for pleasure by men and women forming two lines opposite each other. The men flourish knives and spears.

Ebala.—Directly the man dies the family begins to order sugar-cane wine, which takes a few days to prepare in any large quantities. As soon as the wine is ready, a large hard wood drum (*likole*) is bought and beaten, and the men and women dance for three days and three nights, or as long after as the wine lasts. Lines are formed and a man leaves the line, advances, and a woman leaves the line opposite and advances to within a yard of the man, and there they wriggle, shuffle their feet, shake their buttocks for a few moments, and return to their places, and another couple advance, and thus all down the line over and over again. It is a regular wake accompanied by much drunkenness and immorality—the former openly, the latter secretly.

Bonkani.—After a fight, in which some of the enemy have been killed, the men only meet to engage in the *bonkani* dance. The men dance with their spears and knives, and any goats, sheep, dogs or fowls that approach the dancers are instantly speared, cooked and eaten by them. As a man beats the drum one after the other of the dancers advances and in a solo tells of his exploits in the late fight, which exploits are more in the imagination than on the field of battle; but they vie with one another in "drawing the long bow" on such occasions. This practice is not solely confined to the African savage.

The *Sumba* dance is mentioned in the next section under the *Nganga ya losumba*.

Luck in spears, etc.—When a man is under the sway of the *mingoli* (disembodied souls) he gets his spear, and tying some dried plantain leaves to it he holds it before him with his left hand, and as he trembles with the excitement of the spirits in him, the spear shakes and rustles the leaves until the *mingoli* go out of him into the spear and that spear then becomes *likongo ja ngidi* = a fetish spear, and his luck is bound up in it. This spear may not be touched by anyone but himself, and is carefully guarded by its owner, for to lose it is to fail in all his undertakings. These spirits are passed into hunting spears, fighting spears, and fish spears, and although they will be especially effectual in their own particular line, they will also have a general influence on the man's luck. It is also asserted that a rich man who has the *ejo* spirit passes that spirit into his canoe, and

this enables him to make successful trading expeditions and other journeys to his own advantage.

XLIV. MAGIC AND MAGICIANS.

There is not so great a variety of *nganga* among the Boloki as among the Ba-Kongo of the Lower Congo, nor is the *modus operandi* of bewitching people, and of removing the witchcraft so well defined.¹ Among the Boloki the *nganga* is much in evidence, but he is not regarded with much awe or respect. The office is hereditary, and it is difficult for a person to become a *nganga* who has not already a member of one or the other cult in his family. The old *nganga* teaches his son, free of all charges, the tricks of his trade, and when the novice is considered efficient he undergoes the following test:—Something is secretly hidden, and he has to find it, and having discovered the secreted article, he has then to perform some *nganga* ceremony, such as killing an animal possessed by a spirit—a trick he has easily learned from his father, and after that he blossoms out as a fully qualified *nganga*.

If a person in whose family there has been a *nganga* desires to join the profession, he goes to an old *nganga*, and on paying a fee he is taught as though he were a son, and has to pass the tests as above; but if a person in whose family there has never been a *nganga* wants to join the cult he is deterred from so doing by being told that he must first kill all the members of his family by witchcraft as offerings to the *mweta*² or spirit of the particular cult. This results in the man refusing to become a *nganga*, and even if he were so callous as to still wish it, his family would not allow him to proceed as they believe they would fall victims to his witchcraft. Thus the secrets of the profession are retained in a very few families; still I have known a slave belonging to a Boloki man become a great *nganga* by pretending to perform a wonderful feat, which was as follows:—

Mayeya, for that was the man's name, was a slave, and one day he went with a lad in a canoe across the river. By-and-by the lad returned without Mayeya, and on being asked where he was the lad replied: "Mayeya fell from the canoe into the river, and since then I have not seen him." Seven days after this Mayeya walked up from the river into the town dressed in his best cloth, etc. The people gathered around him asking him where he had been, and he solemnly informed them that he had been under the river for the whole of the seven days, consulting with the water spirits (*mingoli*), and that now he was a *nganga*. The people believed in him and flocked to him with cases from all the neighbouring districts, and by his many and large fees he became so wealthy that he was able to pay ten men and two women—one woman was equal in price to four men—for his ransom, and then became a slave owner himself and a man of wealth. One day I heard Mayeya boasting outside my house of the seven days he had spent under the

¹ See *Folklore* for 1910 for Lower Congo *nganga* and their black and white magic.

² See in this section for the meaning of *Mweta*, and also in the preceding section under *Mweta*, p. 377.

water in company with the water spirits; so going up to him, I said: "Mayeya, I hear you have lived under the river for seven days." "Yes," he said, "I have." "Well," I replied, "I will give you 5,000 brass rods"—the currency of that district—"if you will stay under the water here in front of my house while I count them." He replied: "I cannot do it just now, but I will return on another day and do it." Whenever I saw Mayeya after that I always reminded him of my offer. The people at last used to urge him to accept my challenge and offer of 5,000 brass rods. They argued with him saying: "You have remained under the water for seven days, surely you can stay under it while the white man counts 5,000, for you know he counts very quickly. Go and get your 5,000 rods and then you will be able to buy two more wives." He, however, put them off with first one excuse and then another, until at last they chaffed him about it, laughed at him, doubted whether he had stayed under the water half a day, much less seven whole days and nights. As he still made excuses the natives lost faith in him, his practice fell off, and the last I saw of Mayeya was his coming to borrow of me 100 brass rods, for he was in difficulties. I said: "No! you have imposed on many people, and done to death many a person by your false charges of witchcraft; I will not lend you a brass rod, but there are 5,000 waiting for you if you will only stay under the water while I count them."

There were some quasi *nganga*. Men and women who had recovered from some serious complaint would set up as quacks to cure that particular sickness. They used massage with hot or cold water, and no water at all, and simple herbs, and there was no doubt that they effected a considerable amount of good. There were female *nganga* who performed the same rites as the male *nganga*, such as *nganga ya bwaka*, *nganga ya libanda*, etc., but the *nganga ya balala* was always a woman and she was the one who made all the necessary medicine for pregnant women, attended at confinement, helped at the delivery of the child, and attended also many of the cases of sickness in men. Each *nganga* was more or less famous in his own line, and with one or two exceptions rarely went beyond his own limits.

The following is a list of the *nganga* so far as I have been able to ascertain them. It is possible that the list is not complete, but I think it is not far short of it.

1. *Nganga ya Mono*. (*Mono* = medicine, charm.) This *nganga* is a general practitioner and not a specialist as are the other *nganga*. He is regarded as knowing more than any of the other *nganga*, with the exception of the *nganga ya bwaka*. He uses all kinds of herbs, and prepares the various charms to ward off diseases, and cure divers complaints, but he never attempts to exorcise spirits or find witches. His fees are comparatively small, and he is consulted in the first stages of illness in the hope that he will be able to effect a cure, and consequently save the larger fees demanded by other *nganga*.

2. *Nganga ya Mbula* = rain. When rain threatens and is not desirable, for some reason or other, this *nganga* takes a small leaf and puts it on the closed fist of

his left hand, and after extending the arm towards the rain he waves it to and fro in a semicircle, and strikes the leaf with the open palm of the right hand, and should the leaf burst at the first smack the rain will stop in *Moluka Mwawi* = (one paddling (see section on "Time"), i.e., about twenty minutes); if it does not burst at the first smack but at the second, then the rain will not stop for two paddlings, i.e., forty minutes, and so on; but if the leaf does not burst at all after repeated slaps, then the rain will not stop for a very long time. When rain is threatening the above ceremony is performed in order to ascertain how long it will be before the rain will fall. If the leaf breaks at the first whack the rain will begin to fall in twenty minutes, and so on. They will start a journey or remain at home according to the indications of this performance.

Physical phenomena (as heavy storms) when taking place about the time that a person dies, or is being buried, are regarded as caused by the deceased person; hence when a storm threatens to break during the funeral festivities of a man, the people present will call the beloved child of the deceased and giving him a lighted ember from the hearth with a vine twined round it, they will ask him to stop the rain. The lad steps forward and waves the vine-encircled ember towards the horizon where the storm is rising, and says: "Father, let us have fine weather during your funeral ceremonies." The son, after this rite, must not drink water (he may drink sugar-cane wine), nor put his feet in water for one day. Should he not observe this custom the rain will at once fall.

To bring rain.—On the shelves in most of the houses are sticks with "medicine" tied round them. These are taken down and plunged into water with some *Malelembe* leaves (arrowroot), and then the rain will fall. It is rarely that they resort to this as the rains fall with great regularity all the year round. Throwing salt on the fire will cause a superabundance of rain to fall.

3. *Nganga ya Bwaka* = (mat).—When a family was troubled with much sickness or frequent deaths, they sent for this *nganga*, who, on arrival, put some stakes in the ground and tied a mat round them, making an enclosure in which he sat while performing his ceremonies. A string was tied from the roof of his clients' house to one of the stakes in his mat enclosure, and the end of the string dropped inside. From this string there dangled dried plantain leaves, twigs, etc. Outside the mat sat some lads with drums and horns, and various folk interested in the rites. When all was ready the *nganga* entered his enclosure and pulling the string shook the leaves; the lads beat their drums, and the men and women sitting around chanted a chorus in admirable time. Directly the leaves stopped the drummers and singers understood it as a sign for them to remain quiet; and then the *nganga* began to speak to the various *mieta* (spirits), and answered himself in assumed voices, pretending he was holding a conversation with them. As often as he was tired he shook the leaves and the drums were beaten and the folk chanted, and when he had recovered his breath he would start pseudo-conversations again. This would be maintained through one whole day (sometimes two and three days), but generally towards the afternoon of the second day he would come out of the

enclosure holding a bleeding head in his hand and assure the family that he had killed the animal in which the *mweta* or spirit was living, and now the family would no longer be troubled with sickness and death. To vary the ceremony the *nganga* sometimes rushed out of the enclosure and into a house, or behind a house, or into the near bush as though in chase of something, and come back with a bleeding head and say the *mweta* was slain.

It is this *nganga* who discovers the witch (*Moloki*) in the family of the deceased one. If a layman charges another with witchcraft the accused can demand that the accuser shall drink the ordeal with him; but if this *nganga* charges a person with witchcraft, the *nganga* will not drink the ordeal; he is not expected to do so, but the accused must drink the *nka*, and should he (or she) fall repeatedly the condemned is either left to die as a result of the large doses of *nka*, or is hung on a tree. The corpse is left unburied—it is the body of a witch—the most hated being in all Congo.

This *nganga ya bwaka*, in killing the *mweta* troubling a family, works hard and earns his money. After several hours a day having been spent in the mat discussing with the *mieta*, and trying to discover which one is menacing the family, he at last decides on one, and when the right moment arrives the *nganga* will make a terrific noise inside the mat as though he were fighting for his life. Shouts, screams, derisive laughter, whacks, thuds and smacks proceed from the interior of the mat, and at last the *nganga* rushes out, panting and sweating profusely, holding in his hand a bleeding head, and declaring that he has killed the animal that was possessed by the spirit that was troubling the family. He will rush with this head to the river and throw it far out into the water. The family is supposed now to recover its good health, and the *nganga* pulls down his mat, receives his fee and goes. What is the bleeding head? On one occasion some of our school lads chased a *nganga* who came from his mat with a bleeding head. He ran for the river, but they headed him off, and in desperation he ran to a pool of water and threw the head in. The boys went into the water and found it was a lizard's head. On another occasion it was a rat's head. Thus the family had paid a big fee to have a rat or lizard killed and the bleeding neck shown to them. Up to that time they had always believed that it was some mysterious animal which the *nganga* had dug up from the ground inside his mat, killed by his occult power, and thrown into the river so that it could never more harm them.

The *nganga ya bwaka* was the most feared and respected of all their *nganga*. It was generally believed that they could see the *mingoli* (disembodied spirits), the *bilimo* (embodied spirits), and the *mieta* (spirits of disease), and hold communication with them. They bottled in calabashes, or captured in saucepans, the local *mingoli* that would otherwise hinder hunters trapping their wild animals; they made the dogs good hunters by their medicines; they gave the reasons for the floods, and the best way to cause them to subside; and they also had close dealings with *Ejo* the spirit of wealth.

4. *Nganga ya libanda*=outside, in the open, *i.e.*, those *nganga* who practise their craft in the open before all the people and not enclosed in a mat.

A family suffering from much sickness has called in one *nganga* after another without relief, and they may have had *nganga ya bwaka* and felt no better after having paid him his large fee, so now they try again with *nganga ya libanda*. He arrives dressed in bits of monkey skins and bush cat skins, etc., and well decorated with charms. Men beat drums, sing chants, and choruses; the *nganga* dances about, working himself into a frenzy. He peers here, there, everywhere, looking for the *mweta* that is troubling the family. He sees it in a plantain tree, hurls his spear at it, but no, he misses it; he sees it on the roof of a house and away darts the spear, only to miss again. He prods his spear into different parts of the outside of the house, but he misses the elusive spirit every time; he is, however, working it towards the doorway. At last the spirit takes refuge in the house, the *nganga* springs forward, enters the house, darts his spear in all directions, yelling loudly and screaming terrifically; then a frightful cry is heard, and in a few moments the *nganga* comes out with the blade of his spear well smeared with blood. He has killed the *mweta*, or rather the animal possessed by the spirit. They always kill these spirits *in* the house; why? The son of one of these *nganga* told me that when his father wanted blood to smear over his spear-head, he dug his finger nail into his gum and procured from thence the blood for the purposes of this trick. On showing the spear thus stained with blood he asserted that he had killed the spirit that was causing all the trouble. He received his fee and went. The semi-darkness of a native hut made a trick of this kind possible.

5. *Nganga ya balela* (plural of *Lela*=a disease caused by a *Bwete* spirit called *Lela*).—The *bwete* spirit has a name according to the disease it gives, or rather the complaint takes its name from the *bwete* that is supposed to cause it. These *nganga* are always women, and are engaged by both men and women troubled by *Lela* or extreme debility. They dance, chant, and shake a rattle until the patient says he has the *bwete* spirit stirring in him, by the way he jerks and sways his body, and then the *nganga* prepares the *etoli* (which see) and invites the *bwete* spirit to go and live in it and not trouble the patient any more. These female *nganga* attend the women of certain totem families, whose children five days after birth have their ears pierced. Such families are supposed to be patronized by a *boweya bwete* (=parturition spirit), who will allow the child to grow strong, healthy, and fat, if its ears are pierced on the fifth day with the proper dance and ceremony, but will cause the child's death if the mother when pregnant does not use the proper medicines under the guidance of this *Balela nganga*, or does not have its ear pierced in the right way. This *nganga* makes all the necessary medicine for a pregnant woman, attends her at confinement, helps at the delivery of the child, and conducts the ear piercing on the fifth day after birth.

6. *Nganga ya likenge* (=saucepan).—A man who is troubled with sickness which has failed to yield to other means, or one in whose family there has been a death and who cannot afford to hire a witch finder, goes to this *nganga*, whose fee

is comparatively small. He on being hired brings out his fetish saucepan of water and placing it in a good position he then pours some sugar-cane wine by the side of it, as the *bilimo* (embodied spirits) are very fond of this wine; then he calls the *bilimo* by putting a leaf on the closed fist of the left hand and striking it with the palm of the right hand; thereupon the *bilimo* show themselves in the saucepan, into which only the *nganga* is allowed to look. A spirit appears, turns and shows his face, and shakes his head negatively when called upon to do so, and as the showing of the face is regarded as a proof that it belongs to an innocent person, it is told to pass on. By-and-by, a spirit appears that persistently refuses to show its face after being repeatedly ordered to do so by the *nganga*, and at last the *nganga* stabs the spirit with a splinter of bamboo, and the owner of that *elimo* who is the *moloki* (the witch) is supposed now to die very soon, and release the *nganga's* client from its malign influence. It is interesting to note that a person's soul can be called from him by a *nganga*, for *elimo* means an embodied soul, *i.e.*, the soul of a living person. It is also worthy of note that they expect more truthfulness in the soul of a person than in the person himself.

7. *Nganga ya Losinga* (from *singa*, to predict, foretell).—This *nganga* dances to the beat of drums, and chants, the chorus being taken up by those present. When he has worked himself and his audience up to a certain pitch of excitement, he looks into his fetish bag of medicine, and from what he sees there he foretells war, or the reverse, its success or failure, and other events as the success or non-success of a trading expedition, fishing and hunting parties, etc.

8. *Nganga ya Mumpoku*.—This *nganga* is the maker of love philtres. A woman takes the nail parings, hair cuttings, and chewed pith of the sugar-cane of the person whose love she desires, to this *nganga*, who makes them into a medicine, and well dries and pounds it into a powder which the woman blows over the object of her love while he is asleep. The man does the same with the nail parings and hair cuttings: but the medicine, instead of being blown over the sleeping object of his passion, is mixed in sugar-cane wine and given her to drink. A slave will use the same medicine to gain an easier time from his master or mistress. This *mumpoku* medicine is also used on persons to cause them to forget a wrong or grant a request.

9. *Nganga ya Ndemo* (vanishing, disappearance).—This *nganga* makes a charm which is rubbed on the body, or tied on the wrist or leg of his client, who, when thus protected, can walk right among his enemies, and if they catch him they find only his cloth, for the person in the cloth has vanished. This charm is used in times of war as the possessor can fight and kill without being seen by the enemy, and this charm is also in great favour with thieves. The charm consists of a yellow pigment rubbed on the temples, or "medicine" mixed with the pigment and fixed to brass wire and tied round the wrist, waist or leg.

10. *Nganga ya Likundu* (craftiness, smartness, skilfulness, witchcraft).—This *nganga* looks at the arteries in the stomach of a dead person to discover whether

the person died by his or her own witchcraft or by the witchcraft of someone else. (See *Awî na Likundu*, Section XL, vol. xxxix, p. 449.)

If there is smallpox in the district the nervous go to this *nganga*, who makes some small cuts in his client's body and sucks out some blood which he spits on to a leaf, and examines carefully. If some small threads are seen in the blood, the *nganga* points them out to others, and says, that as he has sucked out the *likundu* the person will not die even though he may become infected with smallpox. Should no threads be seen and by-and-by the person become ill with smallpox, his friends will tell him that he cannot recover unless he confesses to having bewitched one or more persons. Under pressure of constant nagging the patient will confess (and who among them has not desired the death of one or more enemies and acquaintances) to his mother, or father, or to a loved friend, that he has bewitched several persons, and will mention them by name, and after this confession he may become better. It is a very cute performance. The person's blood is sucked and the threads are shown, and if he does not have smallpox then the *nganga* has the credit of drawing the *likundu* out of him. If, however, he has smallpox then he has his own *likundu* in him and the only way to recover is to confess his guilt; this exonerates the *nganga*. If no threads are seen and the person has smallpox then his own *likundu* has given it, and he must confess, and here again the *nganga* is cleared. If a person has not been operated on by the *nganga*, and gets smallpox, he must confess to bewitching others, and should he recover, well, his confession cleared him, should he die then someone else bewitched him. If a person did not get smallpox then he was not bewitched by anyone and had no *likundu* himself. During an epidemic of smallpox at Monsembe in 1893 it was impossible to isolate the patients, for according to their beliefs regarding infectious diseases, as stated above,¹ there was no need for isolation. I have seen the hut of a patient literally crowded with women, lads, and girls, giving advice and showing sympathy with the sick. Many died from the horrible disease.

11. *Nganga ya Luwa* (sleeping sickness).—The patients go to this *nganga* who snicks their bodies with numerous small cuts, and then stands them in a semicircle about his saucepan of very hot water, with which he well sprinkles them and then very vigorously rubs pepper paste in the cuts, and puts a drop or two of pepper juice in each eye. There are many cases of debility, lack of energy and anæmia in which the symptoms are somewhat similar to sleeping sickness, such as drowsiness, no desire to move about, loss of appetite, etc. These cases are benefited by the massage of pepper and by the change of scene and life in the village of the *nganga*, and when they return to their own towns after three or five weeks' treatment much better and sometimes quite well, they are regarded as cured cases of sleeping sickness by the *nganga* and natives. The *nganga* puts various tabus on his patients both as to what they should eat, and how their food should be

¹ Vol. xxxix, p. 450.

cooked. The pepper in the eyes causes great agony but it keeps the patients awake and moving about with the pain.

12. *Nganga ya Mokalala* (madness).—This *nganga* has a saucepan of water in which some medicines have been mixed, and the patient immerses his face in it every day, and has some juices dropped into his eyes as a cure for his madness.

13. *Nganga ya Bingbongbo* (spirits of unborn babes).—It is believed by the natives that the spirits of unborn babes are preserved in the *liboma* (which see under section on "Reproduction") of each family, and while there these spirits are called *bingbongbo*. A lad is very thin and weakly, and his father kills a monkey, or buys a large piece of meat or a big fish, and then sends for this *nganga*, who shuts himself up in one of his client's houses and is heard to hold conversation with these spirits. After a time he comes out and tells his client that the *bingbongbo* complain because he has never given them a feast, and that if he desires to see his son improve in health he must at once make a feast for them. The father thereupon gives the monkey, fish or meat, he has bought ready for this demand, to be cooked, and the *nganga* takes the mess on a plate into the house, puts it down on the floor, and comes out and shuts the door. After a time he enters and brings the plate out and shows that the food has partly disappeared, and that the edge of the plate is smeared with the food. This is accepted as evidence that the *bingbongbo* have partaken of the feast, and the patient will get better as the offering has been accepted. The *nganga* gives the patient a new name—if a girl *Bolumbu*, and if a boy, *Loleka*.

14. *Nganga ya Losumba* (from *sumba*, to detect a witch).—A death has occurred and as the deceased was a prominent man and the *nganga ya likundu* has inspected his entrails and stated that he was bewitched to death, the *nganga ya losumba* is called in to detect the witch. The usual fee is one slave but, if he is a very famous *nganga*, he will demand and receive two slaves. He insists on receiving his fee before he begins operations as he may have to rush off with undignified haste directly he has pointed out the witch, because the accused person does not always take the charge quietly but will rush off for spear or gun to kill his accuser, hence the demand for the fee first. The people gather in a large circle and the *nganga*, dressed as a woman in skins and cloth fantastically arranged, and his face, legs, and arms decorated with pigments of various colours, takes his place in the centre, and dances throughout the whole of the first day to the beat of drums. Towards the end of the afternoon of the second day he points out the *moloki* or witch, and hurries to his waiting canoe. The accused must take the ordeal and abide by the result.

15. *Nganga ya Jebola*.—This is the *nganga* who looks after the *Jebola* dancer and dance (which see under dances). She feeds the woman with the camwood powder, clay, and sugar-cane; sits up with her at night, for she is supposed not to sleep during the seven days of her obsession, and looks after her interests generally and shares her takings. The *Jebola* can only be danced at intervals of from ten to fifteen months. It is a dance of pleasure.

16. *Nganga ya liboni* (= vision, dream).—These *nganga* are said to scrape their eyes with the sharp edge of the sugar-cane grass, which operation clears the vision and enables them to see the *moloki* or witch afar off and frustrate its evil designs. They pretend to see the *moloki* at night running off with the *elimo* (soul, spirit) of a person, and this *elimo* they rescue and restore to its owner, and the next day the *nganga* will go to the owner of the *elimo* and say: "Last night I saw a *moloki* running off with your *elimo*, and I stopped it or you would be dead by now," and then he demands a present, which is at once given through fear, for if they refuse to satisfy the *nganga* he will allow the *moloki* to escape another time with the *elimo*, and he will die.

17. *Nganga y' elembia* (to overawe, subdue, soothe).—A man who has many and powerful enemies, goes to a *nganga* of this cult and procures medicine from him to overawe or soothe his enemies so that they will no longer desire to work him any harm. They will become subject to his will and influence. This *nganga* also initiates his clients into various tricks for striking awe into the onlookers that they may fear their power and respect them accordingly.

18. *Nganga ya mungunga* (bell).—This *nganga* owns a fetish bell. A man is sick or has lost a relative by death and he accuses several members of his family of witchcraft. They of course deny the charge, so the accuser challenges them to drink the medicated water from the fetish bell. The person who refuses to drink from the bell is regarded as guilty of the witchcraft. If, however, they agree to drink from the bell, the *nganga* who owns one comes and gives a draught to each person from his bell, and it is firmly believed that the one guilty of witchcraft will soon die from the effects of the bell-medicine, whereas the innocent will suffer no inconvenience from it.

Bonganga is the general name for charm, amulet, talisman, mascot, etc., and it is also the word for the skill or art of the medicine man—that which constitutes a *nganga*, but it is difficult to decide whether this skill arises from his own inherent intuitions, or is imparted to him by his charm. The word *bonganga* favours both these views. The prefix *bo* can indicate the thing into which a *nganga* has put his power, hence a charm, amulet, etc., or it may denote a noun of quality equivalent to "ness," and thus point to the skill, art, etc., or that by which the *nganga* is able to perform his pretended wonders. I am inclined to the former meaning.

No sacrifices are offered to the *manganga* (plural of *bonganga*) and there is no mode of *refreshing* them as on the Lower Congo, but if a *bonganga* does not act as it should, the owner takes it back to the *nganga* to have some more medicine put into it, as it is thought that the old is ineffective from being played out. Images were not used as fetishes by the Boloki people. The whole time I was among them I only saw two in use and the owner readily sold them to me for a few brass rods—his readiness, and the low price he asked, showed they were not the objects of much superstitious regard. The charms belonging to the *nganga* have been handed down from time immemorial, and these *nganga* make the charms for the

people. The following is a fairly complete list of their charms and their various powers:—

1. *Elboko* is a fetish saucepan which is supposed to be the dwelling place of a spirit called *bwete bwa luwa*, spirit of sleeping sickness. It is simply a decorated saucepan of bush water into which the *bwete* is driven by the *nganga*, and the person who owns it must spread a little food about it every time he has a meal, and occasionally pour a little sugar-cane wine into the saucepan, for the spirit is fond of this kind of wine. Unless he treats the *bwete* properly he will have a relapse. It is this saucepan that is used in the *bowa* ceremony (which see under Medicine). When a woman is badly treated by her husband she breaks this saucepan (see Section XXXV on Marriage, vol. xxxix, p. 442).

2. *Ekando* (hidden snag).—The owner of this charm can break the pursuing canoe of an enemy, and thus precipitate them into the water. In their trouble they will call on the *ejo* spirit or *ngubu* (hippopotamus), or *ngoli* (crocodile) to help them. The many snags and rocks in the river favour the belief in the powers of the *ekando* charm. In the excitement of a chase the paddlers do not always look where they are going and will run on a hidden snag or rock, and the impact will smash the canoe, and then the charm has the credit of it. I have been nearly thrown out of my canoe two or three times by running on a snag.

3. *Ekoko* (axe).—The possessor of the fetish axe, if hard pressed by his enemies, can take the *ekoko*, and beat an island with it, whereupon the island splits and he passes through the opening which at once closes behind him, and he is safe. The numerous creeks favour this superstition.

4. *Ekundu*.—If there is much sickness in a family the *nganga ya bwaka* is called, and after studying the matter, says:—"There is an *ekundu* in the family." He erects his mat to make an enclosure, and then goes through a ceremony of much drumming, chanting, etc., and by-and-by digs a hole inside his mat enclosure, and gets out the *ekundu*, which is a small saucepan containing animal and fish bones, and brass links. The pot and contents are said to be left by a *mweta*, an evil spirit of a deceased relative who desired to trouble the family. The links, one or more, represent the spirits of those who have been done to death by the *mweta* since the decease of the wicked relative. After removing the *ekundu* from the ground the *mweta* has no more power over the family. Sometimes the ceremony is performed in the open, but it needs more cunning to deceive the spectators.

5. *Etoli*.—A barked post shaped bluntly at one end, and painted yellow and spotted red and blue. It is about 4 feet long; 18 inches are put in the ground and the other 2 feet 6 inches stand out of the ground. It is erected near a house belonging to a man who has suffered one of the *mête* complaints (which see under *bwete* in Section XLIII). The spirit of the complaint is driven out of the patient to reside in the *etoli*, where it is appeased with offerings of food and drink. The food is thrown on the roof for the *mête* in the *bitoli* to eat, and sugar-cane wine is poured on the *bitoli* for the *mête* to drink, and camwood powder is rubbed on the *bitoli* to soothe and appease the *mête*. The *bitoli* are the resting

places of the *mēte* and the nicer they are made the better satisfied will the *mēte* be to reside in them instead of troubling the patients. The *mēte* are the spirits that inflict certain diseases.

6. *Jeko*.—A charm put across a road to keep the *moloki* (witch) and *mingoli* (evil ghosts) from entering a town, or passing along any path on which the *jeko* is placed. It is made by a *nganga* of anything to hand.

7. *Jelo* (sandbank).—The owner of the *jelo* charm if hard pressed by his enemies can take a handful of sand and throw it towards them, and a sandbank will immediately form and stop their progress until the charm owner is far beyond their reach. The innumerable sandbanks in the river favour this belief.

8. *Moselo*.—This is a fetish ceremony for the discovery of a murderer, and is performed in two ways. (a) A relative takes the nail parings and hair of the murdered man to the *nganga*, who makes some medicine, after which he says that the man was murdered by someone in the village. A saucepan of water is then placed on the ground, and each person in the village has to hold his or her hand over it, and the one whose shadow is seen at the bottom of the saucepan is the murderer. (b) The nail parings and hair of the murdered man are rolled in the gossamer of the palm tree, tied and laid on the ground, as representing the murderer, in front of the *nganga*, who says:—"If this man eats, or drinks, or walks in this country again let him be cursed by this ceremony." Then the *nganga* brings his knife down and cuts the *moselo* in half. If shortly after this a person becomes suddenly ill of a serious complaint and dies, he is regarded as guilty of the murder, and it is taken as a proof that the spell has worked.

9. *Lambu* (ta *lambu*).—The *nganga ya bwaka* when he wants to invoke the *mieta* or the *mingoli*, spreads a leaf on the closed fist of his left hand, and strikes it with the palm of his right hand, and if the leaf bursts the spirits have heard and come at his bidding, but if the leaf does not burst after three slaps he desists, as the spirits are recalcitrant. When he wants a particular spirit he calls its name as he strikes the leaf.

This is also the mode of driving rain away, or discovering how long it will be in passing away. (See above under *nganga ya mbula*.)

10. *Likato*.—A saucepan of marsh or forest water is procured, and some medicine is put into it. The saucepan is placed on the fire, to which none but the operators have access, and then, after due time, they say to the *likato*: "Will they kill us in the fight?" If the water boils up and fills the saucepan some of them will be killed, so they abandon the war; but if the water keeps low, they ask:—"Shall we kill some of them in the fight?" Then if the water rises in the saucepan some of the enemy will be killed and the war is prosecuted; but if the water does not boil over, it shows that they will kill none of the enemy, consequently the fight is dropped. The test is put several times before they consider it satisfactory.

11. *Likenge*.—A saucepan for finding witches (see above under *nganga ya likenge* for mode of procedure).

12. *Likuku*.—Some spears are stuck in the ground and a mat is drawn round

them enclosing a space in which a saucepan of water is placed and in that the witches are revealed. It is used by the *nganga ya liboni* (see above) for finding witches, thieves, and discovering future events.

13. *Likunda*.—If a woman runs away, her husband gets out her nail parings and hair cuttings which he has gathered for this purpose, and takes them to a *nganga*, who puts them into a skin and returns them to him. The husband *ta lambu* (which see), and says: "If my wife stops to eat at the place whence she has run let her die quickly." The same is done to get back a runaway slave or to punish some one with whom the owner of *likunda* has quarrelled. For this reason nail parings and hair cuttings are always destroyed if possible.

14. *Liloki* = 15. *Likundu* = 16. *Elembia* = 17. *Ndemo*. There are aspects of these charms which are all alike in that a man who possesses either of them can go into the midst of his enemies and escape although they desire to tie him up. *Liloki* because he bewitches them; *Likundu* because he is too clever and crafty for them; *Elembia* because he fascinates them and causes them to forget their hatred; *Ndemo* because he becomes invisible to them.¹

18. *Lingundu*.—A very long, broad-bladed knife with curved points made in the Libinza lake district. When this knife is striped with a yellow pigment, it is used as a charm to cause sickness to a thief; and when put near the door of a sick man it will kill the witch that tries to enter. It is used for cutting the *elimo* spirit in half by the *mveta* spirit of a *nganga* to effect the death of a person who is the enemy of his client.

19. *Linjombi*.—A charm of yellow pigment put on each temple to render a thief cunning in stealing.

20. *Losenjo*.—A charm that gives great success in fishing.

21. *Mantuka*.—A charm used to render the owner invulnerable to all weapons used in fights and quarrels.

22. *Mokando*.—A cross stick on uprights rubbed with camwood powder, and arranged with a noose to catch any witches that try to enter a house or village, and is thus regarded as a health preserver.

23. *Mokombe*.—A plantain stalk bound with medicine to keep the owner's canoe from being swamped in a storm. The *mokombe* need not be in the canoe as its powers can work through any distance of space.

24. *Montala*.—A bundle, horn, or hollow bamboo with medicine in it. Used to render the owner attractive to women, to slaves, and to folk generally and thus make him successful in all undertakings. Handsome, healthy, prosperous men are supposed to be what they are on account of the benefits bestowed by this charm.

25. *Mopoto*.—A charm derived from the *mopoto* spirit, which enables its owner always to take prisoners in a fight, and helps him to disappear with them if pursued by the enemy.

26. *Mpeto*.—A charm to prevent the owner from being wounded in a fight.

¹ The man rubs medicine on the body and then walks right through his enemies, and when they catch hold of him they find they have only caught his cloth.

This name is given to the brass ornaments on a state officer's uniform as the natives thought they were worn for that purpose, and not as a sign of rank.

27. *Mumbamba*.—A man is very unsuccessful in spearing fish although his opportunities have been good. This lack of success, he believes, is due to a pregnant woman in his family who has not performed the *mumbamba* rites of having her stomach snicked and camwood and medicine rubbed into the cuts. When this ceremony is observed his luck will change, so he thinks. If apparently there is no pregnant woman in the family he will believe that there is one who is hiding the fact. This is often a way of covering one's ill success.

28. *Mai ma mungunga* (= bell water).—This is used by the *nganga ya mungunga* (= wizard of the bell). A person is very ill and he charges his family with bewitching him. They deny the charge, so he challenges them to drink the water dipped in the *nganga's* bell, which will not hurt them if they are innocent, but will kill the one who is guilty. Anyone who refuses to drink it is regarded as guilty of witchcraft.

29. *Muntoka*.—A decorated saucepan of small sticks placed under a shelter, and the saucepan is supposed to be the dwelling place of the *bwete* spirit of *makwata* (a form of sleeping sickness). (See *eboko* and *etoli*, Nos. 1 and 5.)

30. *Mutumu*.—A forked stick or cane carried by a man, who has had *yambaka* (rheumatism), as a charm against the return of the complaint. If the stick is touched or broken by anyone the man will have a bad relapse.

31. *Nguma* (python).—A charm used for protecting wealth and slaves. If either is lost the charm can quickly recover them.

32. *Njombo* (eel-like fish, *Protopterus Dolloi*).—A charm that imparts all the slipperiness of the *Njombo*. It is used for fighting, thieving and raiding, because it enables its owner always to escape even from the very clutches of his enemies.

33. *Nkinda*.—A charm ring for neck or wrist as a cure for and preventive of diarrhoea. Especially used for babies.

34. *Nseka*.—A charm tied to any object to preserve it from robbery or destruction. It is made of anything, according to the preference of the user, as shells, leaves, skins, etc. Such a charm is often carried through the town to notify that something has been stolen and to bring a curse on the thief—the *nseka* is then made partly of the same material as the thing stolen.

There is no distinct word for *evil eye*, but one person is supposed to *loka* or bewitch the farm of another so that the produce—sugar-cane, cassava, or maize—will not grow. To remove the effects of the *evil eye* the owner of the farm calls a *nganga*, who knocks a stake into the farm, and, if a person is bewitching the farm, the stake is supposed to enter that person, and she or he will soon die unless they desist from their bewitchment. If through this same witchcraft goats die off or will not breed, the owner will find some one who for a consideration will look after them, and will *pretend* to sell them to him, so that the one who has been bewitching them will stop his evil practices, as he thinks the goats no longer belong to his enemy, and it often happens that the goats being taken to new pastures become

more healthy and breed, and this is sufficient proof that someone was formerly bewitching them. If, however, the owner cannot find anyone who will look after his goats, he calls a *nganga*, who takes a young palm and splits it into two equal parts and lays one on each side of the road, and then if the witch comes that way, and passes between the pieces of palm, he will become diseased and die.

A father (or guardian) curses his child by words, and then the child will neither grow well, wise, or rich; but this is only resorted to upon great provocation. Should the child become penitent and apologise for his evil ways he takes a large fish, or monkey, or a goat to his father and begs him to remove the curse. The father accepts the present and then eats the stem of a *munsangasangu* and spits the pieces out on the palms of his child's hand and says: "What I said, I said in my anger and I now remove the curse." The child is comforted and the two are reconciled. A person curses an adult relative in the following way: He rubs his thighs and then turns his naked buttocks towards the one to be cursed and says: "Be accursed." Early morning is reckoned to be the best time for making this curse effective. This is also done in the face of an enemy as a curse on them.

When cassava roots are dug up from the farm they are put into a hole to soak for a few days until soft and the poison is extracted. Should a woman find that her roots are being stolen from the hole, she takes a piece of gum copal, and fixing it in the cleft of a split stick, she puts it on the side of her cassava hole, and at the same time calls down a curse on the thief. Should the thief be a man he will henceforth have no luck in fishing, and should it be a woman she will have no more success in farming.

A very common curse used on most occasions is to *bete mobondo* or strike on the ground with a stick, and to mention the person cursed, and the person thus cursed will have dysentery of a very bad form, and the curser may say: "May I be cursed if I do such and such a thing," thus the curser may become subject to the disease should he ever break his word, *e.g.*, a woman has constantly angered her husband, and he will *bete mobondo*, and say: "May I be cursed if I ever again eat food cooked by you." Such a mode of procedure will bring a woman to her senses, and she will beg her husband to remove the curse from himself, for undoubtedly the curse goes further than the mere non-eating of food cooked by her. It means that he has put a tabu on her and will have no more to do with her—she will be married but not a wife. Should he after a time relent, the curse is *removed from the woman* instead of from the man by the following ceremony, which is called *bondola mobondo* (to reverse or remove the curse). A trench is dug and the women sing: "*Bondola bondo mobondo bondo* (remove the curse, the curse of beating on the ground)." A spot of red camwood powder is rubbed on the middle of the chest, or as they say, "over the heart," and the curse is removed, and the two are reconciled.

There are other curses used by old and young during fits of passionate anger as: *Wa na likundu* (die by witchcraft), *Wa na lilanga* (die by euphorbia poison), *Lela nyongo* (cry for your mother, *i.e.*, may your mother die). The last is a curse

bitterly resented and is only used when a person is greatly exasperated. When a person is undergoing any ordeal test he repeatedly uses the word *ngambu*, which means: "If I am guilty let the ordeal work against me, but if I am innocent then let my accuser be accursed and die." The *ngambu* curse is much dreaded.

To reverse the effect or effects of accidentally kicking a person or touching them with the foot, which is equal to cursing them, the person must turn round and slightly kick again the person touched, otherwise bad luck, etc., will follow the one accidentally kicked. Where we should apologise they kick again, and this is called *bandola* (to reverse the effects of the first kick). They are exceedingly careful not to touch a person with the foot in passing—that brings bad luck—and not to step over a person—that is an insult.

When a son or daughter is about to leave home for another town, or to travel and trade, the father or grandfather chews the leaves of *nsansanga*, spits them out on a leaf, and mixes some camwood powder with it, and the son (or daughter) has to rub a little of this mixture on his body every day, otherwise he will not find favour with those among whom he may live or travel. A son will not travel without this *mukako*.

If a man loses a relative or has an enemy he goes to *nganga ya likenge*, who calls up in his saucepan of water the spirits of various people whose images are visible in the water, and the client, who sits by watching the water, allows one reflection after another to pass until the reflection of his enemy is shown in the saucepan, and that reflection or *elimo* (soul) he pierces at once with a palm splinter as a substitute for a spear, and the one who owns that *elimo* will sicken and die. Sometimes a piece of wood or plantain stalk was roughly carved to represent the enemy, and wherever it was stuck or cut the enemy would feel intense pain, and to stick it in a vital part meant death.

Divination was practised in many ways besides that referred to under *nganga ya losinga*¹ and also under *likato*² and *lingola*.³ There is also divination by wood ash on the same principle as ours by tea leaves. Then again, there was another form thus: If it rains to-morrow then so and so will arrive on the third day, but if it does not rain that is a proof that he will not arrive for many days. A bundle of splinters is taken, one of which is longer or shorter than the others, and the person who draws that particular one has to do the thing agreed upon beforehand, or if he draws that one a certain event will happen, and if he does not draw it then it will not happen. These modes are all called *jonga*.

Konga is the name given to a ceremony at which there is much drumming and the *nganga* dances until he works himself into a frenzy, and then communicates with the *mweta* and other spirits by whose aid he predicts future events and discovers witches. *Konga* is the power to perform this divination and the medicine that gives the power. Folk were often guided by their dreams, and under WAR will be seen divination by the movements of birds, snakes, and striking a foot against an obstacle in the road.

The general belief is that only one in the family can bewitch a member of

¹ p. 386.

² p. 391.

³ p. 364.

the family, and who would go to the trouble of bewitching one of his own family unless he was to benefit by the death of the bewitched person? and who benefits by the death of a father or a brother? Why, the son or another brother. Consequently, when a father is ill, the son is regarded with suspicion, and after trying all means to drive out the sickness, the patient will, as a last resort, give his son the ordeal, but not enough to kill. If he vomits it he is innocent, that is proved beyond doubt and no harm is done; but if he does not vomit, but becomes dazed and stupid—well, he is simply the medium by which the occult powers are working on his relative, and the ordeal dose will clear such powers out of his system, and being no longer able to use him as a medium the father or brother will recover. The lad is carefully tended until the effects of the ordeal have passed away, then he is warned not to let his body be used for such purposes again, and he is set free, and is looked upon by his playmates in the village with as much curiosity as a schoolboy just out of hospital with a broken leg. The boy's excuse is, and it is readily accepted by all, that he was full of witchcraft and did not know it. I knew a case of a cheeky urchin who received a box on the ears from his uncle, and the youngster turned round and said: "I will bewitch you." Shortly afterwards the uncle fell sick, and in spite of remedies and *nganga* he continued ill, but at last he made the boy drink the ordeal, and not vomiting it he was considered guilty of bewitching his uncle, who had the boy well thrashed and demanded 200 brass rods of the boy's father to pay the *nganga* for administering the ordeal, and to teach the boy to let other folk alone. The uncle pulled up all his houses and went to live at the other end of the town to get beyond the lad's influence. This uncle married another wife who had a young brother who was in my school. One day the uncle came asking for this lad in order to give him the ordeal; I refused to give up the lad for such a purpose, and "Besides," I said, "he does not belong to your family." (I had not heard of the marriage.) The man replied: "Yes, he does; I have married his sister, and he is bewitching me through his sister who is my wife, and my nephew who took the ordeal some time ago says that he passed on the witchcraft to my young brother-in-law." It thus appears that a mischievous boy can say he has passed on his witchcraft to another lad and so get that youngster into trouble.

The *nganga's white art*, i.e., those means used for curing the people of their many mental and bodily ailments may, to us, seem foolish and inadequate, but there is nothing to condemn in practising it except that it deceives the people. Whether the *nganga* deceives himself—believes in himself—is a question difficult to decide. Undoubtedly through generations of inherited knowledge concerning herbs, etc., they have remedies that do good to their patients, and there are many faith cures, the result of an implicit belief in their *nganga* and the means used. The system is founded on quackery, but, like quackery in Europe, the remedy sometimes meets the disease, and such successes are remembered and talked about, and the failures are forgotten. *Black art* is practised, but this is condemned by the natives in as strong language as any white man can use. Those who practise

it have to pursue it in secret, or the hatred of the whole country side would fall upon them.

XLV. MYTHOLOGY.

When first I went to reside among the Boloki I found it very difficult to collect their folk stories, and the manner in which I discovered that they had stories, and the way I collected them, together with a translation of some of the folk tales, I have already published in *Folklore*.¹ Other stories with notes I will publish later as an appendix to these papers. Under the section on RELIGION will be found some information on their ideas about God, spiritual beings, and monsters, and I would refer the interested reader to Section XLIII on RELIGION, and to the above-mentioned issues of *Folklore*. They have also many stories about men and animals, and to such morals are attached. The stories are told on moonless nights around the village fires when it is too dark to dance and play, or around the camp fires when travelling or fishing. The stories depict the cunning way in which some animals outwit others—generally the smaller ones outwitting the larger and more cumbersome, that the biter is himself bit, and the bully overwhelmed with ridicule. Many of the stories try to account for the peculiarities observed in nature, as why birds build their nests in certain ways, or have no nests at all; the enmity among the various animals; the presence of dogs and fowls in the towns; the cause of death, and the origin of fire. Some stories would well illustrate the text: "Be sure your sins will find you out," while others are absurdly comic, and many of them are dirty. A line from some of the stories is often used as a proverb, or to call up the situation described in the story as a warning to a person not to try to over-reach another or he himself may fall. No European element is to be found in them, as they were procured before we could talk very freely with the natives, and certainly before our teaching had in any way influenced their thoughts and modes of expression.

Many of the stories are told for amusement, but most of them are told as true, even the amusing ones, and undoubtedly they embody the wit, wisdom, and philosophy of life. The stories were sometimes told in their palavers to enforce a point and drive home a moral. There is a legend that the moon was once a python, and made a road for itself on the earth. Some adventurous hunters trapped it, but on noticing there was no more moonlight they let it go, whereupon it sprang into the sky and never again returned to the earth. Some say that the moon dies every month, but others say when there is no moon that it has gone on a long journey. There is much shouting and gesticulating on the appearance of a new moon. Those who enjoy good health ask for it to be continued through the coming month, and those who are sick lay their complaint down to the coming of the new moon, and ask it to take away their bad health and give them good health in its place. They thought the stars were a species of large fire-fly, that formerly existed on the earth, but now gone into space. An eclipse is caused by the

¹ Vol. xii, 1901, pp. 181, 458.

moon or sun hiding itself, and shooting stars and comets are supposed to signify the death of a great chief. I have not met with any legends regarding the origin of the sun, of man, or of a deluge, or of the destruction of the world. There are stories of folk with tails, but of no animal ancestors; of dwarfs, and frightful monstrosities, but not of giants. When the end of a rainbow touches a town a death is sure to occur there, and the bright red glow occasionally seen at sunset indicates the death of a great chief. In the story of Libanza (see the section on RELIGION) it will be noted that the last adventure is very similar to our Jack and the Bean Stalk—the palm grows higher and higher as Libanza ascends it, and at last he reaches the fronds and alights on a new world, and by his bravery he kills a being who was daily swallowing up the people.

There were misty ideas concerning the rebirth of a dead person, preferably an ancestor. A few years before Stanley descended the Congo there was a general belief extant among the Boloki that many of their ancestors would appear in another form, and yet would be recognisable by similarity of features to those whose *appearances* the spirits took. When the white men arrived this belief seemed to be confirmed by the fact that they often thought they saw a likeness in the features, walk, or gestures of some white men to dead men whom they knew. I have often myself been amused when a motion, a glance, or some little peculiarity among these folk has called vividly to mind some person I knew at home. When we came here in 1890 my colleague was thought to resemble a chief who had died some time before, and I was thought to be like another who had died. We found a prediction extant that white men would come, and some of them would be like the chiefs who had died, but this slight suspicion of a belief in reincarnation may, I think, be accounted for by rumours of the white men having filtered through from both coasts. The Boloki thirty years ago were a strong war-loving people who travelled far and wide on the river; and slaves were bought and exchanged from widely different parts, and of course carried with them the news and rumours, true and false, of their last residence. This factor in the disseminating of religious belief, and the interweaving of those beliefs into what is often a patchwork whole, has not been properly allowed for in dealing with the superstitions of African races.

XLVI. HISTORY.

Formerly, the term Bangala was applied only to those natives who lived at, and in the neighbourhood of Diboko (Nouvelles Anvers), but in a work published in Brussels, called *Les Bangala*, by M. Cyr. van Overbergh and M. de Jonghe, the term Bangala covers an area reaching far east of Bopoto and west of Equatorville, north of the Welle and south of the Congo. This includes a dozen different tribes, talking as many distinct languages, having various tribal marks, and having very different customs, etc., and among whom there is nothing in common but their black skins and backwardness in culture. In my first paper I used the word Bangala in its original and restricted sense, but since seeing the above book I have

preferred using Boloki as a more definite term, applying to inhabitants of certain towns on the main river, on the Mobangi River, and the Libinza Lake. Intermixed with the Boloki towns were some towns belonging to a hinterland people known well to us as the Bomuna folk.

The Bomuna people, about the middle of the nineteenth century, came from the bush towns lying in the forest between the Mobangi and Congo Rivers, and settled on the banks of the main river. Not being a riverine people, they had no knowledge of swimming, and possessed no canoes. I knew them as very timid in all matters relating to water and canoes. They worked their way along the river's bank from the Monsembe district up river until they came to the Ejeba stream, near the village of Nyoi, which stream they passed by means of a stout cane creeper they found that happened to stretch across the water. Many passed, and while others were working their way hand over hand along the cane creeper it broke and severed the communication between those on the opposite sides of the stream. Those that found themselves on the eastern side of the stream continued their journey and founded the settlements of Diboko or Iboko, now Nouvelles Anvers. Thus the ancient people of Diboko were Bomuna of the tribe of Bobanga, of whom Mata Bwiki is the best known to fame, being the headman who encountered Stanley, and on whose land the Congo Free State built their station of Nouvelles Anvers.

About forty-five to fifty years ago some Libinza Lake people from Bosesela, of the tribe of Boloki, left their town under the leadership of Munyata, and working through a creek came out on the main river near to Moboko. They paddled down river to the Mungala creek, just above Monsembe, which at that time was well populated with Bomuna. There Munyata made blood brotherhood with Munkua, the chief of the Bomuna, and settled there with his people. The Bomuna at that time possessed no spears, but did their hunting and fighting with sharpened sticks, the points of which were hardened in the fire. Munyata presented Munkua with a spear and received a fine young woman as a return present.

Munyata, the Boloki chief, was apparently a very greedy man, and although he had many wives yet longed for more, and was always asking Munkua for one of his. For a time Munkua occasionally gave one, but Munyata let it be known that any woman who ran to him would be retained, and so much was the Boloki chief admired and feared that one after another of the wives of Munkua ran to him until at last only one, his *Nkundi* (favourite, principal wife), was left, and she was eventually taken from him by force by Munyata. Munkua was so exasperated by this treatment that, taking the first opportunity that offered, he speared Munyata to death.

On the murder of Munyata the Boloki folk came out in crowds to avenge the death of their chief, and so successful were they with their iron spears against the sharpened sticks of the Bomuna that, although more numerous, the latter gave way before them and at last took refuge in a high *Molondo* (Bombax) tree. The tree was surrounded by the Boloki, who threatened to starve their enemies to death

unless they submitted, and apparently after some palavering the captured people had the privilege of selecting their own future owners. Thus one would say : " I will take so and so as my master," and on his request being agreed to he would swing down from his branch and take his place among the followers of his new master. In this way they divided themselves among their conquerors, and it seems from all accounts they were well treated by their Boloki masters.

Other contingents of the Boloki came out on to the main river, and wrested sites from the Bomuna at Monsembe, Lobengu, Maleli, and Bokomela, and up river at Bombilinga. In the meantime the Diboko Bomuna had increased in numbers and had possessed themselves of canoes, and learned the way to manage them. Their number had also been greatly increased and their passions inflamed by those who fled from the Mungala creek during the fight caused by the death of Munyata. These Diboko Bomuna so fought and harassed the Mungala creek Boloki that the latter fled to Mobeka, at the mouth of the Mungala River, undoubtedly passing behind the islands to avoid their enemies at Diboko. When first we went to live at Monsembe a very high tree that stood on the bank at the bend of the river was pointed out to me as their post of observation when watching for the Diboko Bomuna.

The Boloki tribe in 1890 possessed the following towns on the north bank :—Mobeka, at the mouth of the Mungala River, Bombilinga, many towns in the Mungala creek, Mosembe, Lobengu, in the Mangala creek, Moleli, Bokomela, and Mungundu. On the south banks they owned the towns of Bokumbi, Libulula, and Bolombo. At some time or other in the past the people of Mungundu, Bokomela, Moleli, and Lobengu were called Mangala, and gave the name to the creek in which their principal town, Lobengu, was situated. Perhaps there was a powerful *ju* (family) called Mangala, and this has been corrupted into Bangala, or the Mungala River was supposed to be the original home of these people, and as *mu* meant place, locality, and *ba* meant people, it was easy to call these people the Bangala. I am rather inclined to the latter origin of the name.

Near to Mobeka are the Ngombe people, who are also called Bokumbi, and this tribe is now (1908) becoming mixed with the neighbouring tribes, and as they are absorbed into them they no longer call themselves Ngombe or Bokumbi, but take the names of the peoples whose languages they learn. The people behind Diboko (Nouvelles Anvers) belong to the Mo-Kulu tribe, and the Bomuna of Diboko belong to the Bobanga tribe ; others, in between the Boloki towns down to Bokomela, retain their old name of Bomuna. Below Bokomela is the Mbonji tribe, that came originally from the bush. The Baloi towns on the Mobangi River are Boloki from Lake Libinza. The Lulanga people at the mouth of the Lulongo River are of the tribe of Eleko, and they are supposed to come from a creek just above Equatorville.

The tribe near the river or lake always ridiculed the tribe behind it in the bush, as the Boloki laughed at the Bomuna, and the Bomuna at the Ndobu people further inland. The Boloki were proud of their origin, and neighbouring people

acknowledged their courage and endurance, and preferred their friendship to their enmity. The following is an instance of their bravery and the long distances the Boloki paddled on their raiding expeditions :—In the beginning of 1891 there was a big fight just in our vicinity, and on inquiry we learned that the cause of the fight between the Boloki towns was this : A year or two before our arrival, the Boloki of the Monsembe district had paddled about 300 miles up river and had raided the Bapoto riverine towns and carried off a quantity of loot and captives, and the unsatisfactory division of the spoil had culminated in the fight that cost some few lives.

About 1870 there lived at Mobeka a chief who styled himself Monoko mwa nkoi, or mouth of a leopard, for he boasted that, like that animal, he never let go anyone unfortunate enough to fall into his clutches. He was a terror to the district, and a message from him made a whole town quake with fear, and a demand from him was instantly obeyed for fear of the consequences. He was a man of war, a cruel warrior who held life cheap. He burnt down many a town, scattered the people, or took them as slaves. On one of his raids among the Bopoto towns (which district is 150 miles above Mobeka) he was mortally wounded and carried back to Mobeka where he died. About the time of his death a large comet appeared which is described by my informant as being “like a large star with a hat on it.” It was seen for three nights in succession, and was regarded as a sign of the greatness of Monoko mwa nkoi. Abnormal appearances in the sky were the evidences either of the death of some great chief, whom they did not know because he lived and died among a distant tribe, or were a proof of the greatness of a chief who died within the limits of their district. Emanya of Diboko is the name of another fighter whose cruel exploits were the subject of talk around the evening fire.

XLVII. INITIATION CEREMONIES.

Among the Boloki there were no secret societies and no initiation ceremonies of any kind. The face was tatued, the hair plaited, and the teeth cut simply because it was fashionable, and men and women liked to see these evidences of fashion and what they regarded as signs of beauty in each other. However, it is interesting to note that unless the two upper incisors were cut, the uncut man or woman was not allowed to eat and drink with those who were cut. This may now be a remnant of some initiation rite, but the reason for the objection is lost, and the lads and lasses can have their teeth cut at any age they like. Some are nearly twenty before they have them cut, others undergo the operation at twelve or fourteen. It is a matter of summoning up sufficient courage.

XLVIII. CIRCUMCISION.

Circumcision is practised by all the males. The operation generally takes place between the ages of ten and fifteen, but it is sometimes done later in life.

Several lads in a village decide among themselves that they would like the operation performed on them, and thereupon they go to a person, not necessarily a *ngangu*, who knows how to operate, and he, upon agreeing to do it, ascertains whether the parents are willing for their boys to be circumcised or not, and should their consent be given, the boys go on the appointed day to the operator, and on paying him two brass rods each he cuts them with an ordinary knife, and the blood is allowed to fall into a hole dug for the purpose and is covered with earth. The boys select any growing plantain, no matter to whom it may belong, and hang their foreskins among its leaves, and when the bunch of plantain is fully matured they cut it down, and with some meat or fish make a feast for themselves.

After the bleeding has stopped, the operator covers the wounds with leaves, and puts a tabu on the lads that they are not to eat the heads and tails of fish until their wounds are healed. During the time the wounds are healing the lads can stop in the house of the operator or return to their towns and stay in their own houses. On the healing of the wounds some parents make a feast, others do not; it is quite optional. Great shame is attached to being uncircumcised, and a person can be cut at any age. The only reason given is that women do not want them if they are uncircumcised.

XLIX. MUSIC.

The Boloki are very fond of music, and very quickly acquire a tune. Their voices, as a rule, are loud, clear, steady, and flexible; and they sing from the chest. There are harsh, strident voices among them, but they are the exception, and at certain ages their voices break and become falsetto. Their singing is mixed, *i.e.*, men and women sing together, and is generally accompanied by an instrument, or by the beating of a stick on a plank, or the clapping of hands to give the time. In some ceremonies the women sing by themselves, at other times the men by themselves, and very often the two sexes together, as when travelling in their canoes. The companies sing in unison, and recitative time. Many of their songs are a combination of solo and chorus. When paddling their canoes, either a small drum is beaten or a stick is struck rhythmically on the canoe's edge to give time to the stroke of their paddles, and to the rhythm of their songs, solos, and choruses. As a rule one sings a solo and the others take up the chorus, and both solo and chorus are recitative. Their songs are generally topical, and as they paddle up or down river they give all the latest information of interest to the villages they pass. I have often been amazed at the rapidity and accuracy with which news was spread in this way. A canoe leaving Nouvelles Anvers (Diboko), where the State had a station, would carry up or down river all the gossip of the doings and sayings of the white men of the Station, accounts of their punitive expeditions, judgments passed on captives and prisoners, their treatment of the natives who had taken the taxes there, what new white folk were expected and who was leaving for Europe, etc. This singing answered another purpose. It gave warning to the village that a

canoe was approaching and that the folk in it were friendly. A canoe of any size that approached a town without singing and drumming was regarded as an enemy's canoe and was treated as such, *i.e.*, spears and stones, etc., would be thrown at the occupants of it.

Occasionally a professional singer would visit our town and teach the young men a new tune. He charged two or three brass rods per person, but would not teach the tune unless he had enough pupils to pay him, and then would stay a day or two until they had perfectly learned the tune, and when once they had caught it properly they would set their own words to it. A few years ago I wrote as follows in my note book :—"A professional dancer and singer has recently visited the town, and like so many of his European brethren, he was marked by some eccentricity in dress. He wore a belt of red and blue baize about 18 inches wide (the usual width was 4 to 8 inches) which made him the observed of all observers. Our professional in walking about the town put on a swagger fully in keeping with his position and dignity—his bells tingled, and his monkey and wild cat skins dangled to and fro. He took a large fee from the mourners who engaged him to dance and sing in honour of their dead relatives."

Their songs may be divided into three classes:—(a) Topical as sung in canoes for distributing news. (b) Local songs in which the events of the daily life of the village are temporarily recorded, as the bravery, cowardice, unsociability, generosity, meanness, thievishness, impotence, etc., of the men and women of village or town. These local songs have a great effect on the people, for they crystallize the public opinion concerning an individual, and the African hates nothing so much as being sung against or ridiculed in a song. (c) Songs at funeral festivities when the praises of the dead are sung.

Only drums and rattles were to be found at Monsembe among the Boloki, and they had neither wind nor string instruments. The following are the names and shapes of their drums:—1. *Mbondo*, a long, circular drum about 5 feet high, with a skin over one end, beaten by the flat of the hand. 2. *Lokole*, a wooden drum of hard wood with a slit in it, the kind that is generally called a tom-tom. It is used also for signalling. 3. *Mokoto*, drum like *lokole*, but with handles at the side and a foot rest. It was made of softish wood, and like the *lokole* was beaten with a stick. 4. *Ngoma*, a long tapering drum beaten with a stick. 5. *Liwanda*, a circular drum 2 feet long. 6. *Nkole-nkole*, similar to *lokole*. *Myboko* is a rattle tied on a spear and shaken in the dance. *Mampala* a rattle made of seed pods well dried, threaded together and tied to the ankle of the dancer. *Mungenju*, a small hand rattle with wooden handle, and having small stones in a bent piece of tin. The same name was also given to a basket rattle that had in it anything that would tinkle. In more recent times the Lower Congo *biti* was introduced, and I have often heard English tunes played on it. I was able to buy an ivory nose trumpet, and the man who sold it to me played a very good tune on it. The man did not belong to our district, and the nose trumpet and the *munduli* (ivory trumpet) were introductions from other parts.

One drum, the *lokole*, was used for "talking." By it they could signal messages, they could abuse their enemies, and warn their friends. When I asked some lads how it was done, they took their sticks and imitated the syllables of some words and so went through a sentence. This would have given them unlimited scope for drum messages, but when I pointed out that the same sounds could be understood differently by various persons according to the syllables they thought they heard in the sounds, I then found that for an invitation to a drinking bout certain notes were struck. The people would know who was having sugar-cane wine made that day, or a lad would have gone in the morning with verbal invitations to some of the headmen, and when they heard the notes on the drum they would go at once to the drinking place. Warnings, threats, and abuse each had their own sets of sounds or notes, that were struck in various order. Urgency in warning, vehemence in threats, and fierceness in abuse were shown by the rapidity and strength of the beats.

Many of the *nganga* used much drumming and singing at their ceremonies, especially at the rites for frightening and exhorting evil spirits. Such sounds were supposed to exert a great influence over their patients, and over those spirits of disease that were affecting them. Drumming also soothed the patient, and made him amenable to the *nganga*, so that in answer to his questions he could properly diagnose the case. Their mourning was said to be musical, for while they admired one whose *crying* was in tune, they jeered at another who had no rhythm about her wailing, and imitated her unmusical weeping to the amusement of all present.

They borrowed tunes freely from other tribes, and soon learned to sing all the English tunes we cared to teach them; but I do not think that any sounds affected them like the rhythmical beat of their own drums. To that beat they would paddle vigorously for hours beneath the tropical sun; dance perspiringly through a long afternoon, or through a whole night; fight recklessly, and drink their sugar-cane wine until their stomachs were well distended.

L. GAMES.

Some little girls would take pieces of stick or cassava roots to represent dolls, or as they called them *bana* (babies), and would tie them on their backs with an old rag, and play with them as such. An English doll was too uncanny, too much like a human, for them to play with; they did not understand it, and would put it away, or their elders would take it away and sell it as a charm. Parents fond of their children made small paddles, baskets, and hoes in imitation of their own, and the youngsters played with them when they went with their mothers to the farms, or their fathers in the canoes. Toy hoes and baskets were only given to girls; toy fish traps to boys; but toy paddles to both boys and girls.

The boys of the village made basketwork shields about 3 feet long and 8 inches wide, and with stout water grass and young plantain stalks as spears they took sides, and amid much laughter and good humour fought a mimic battle until one side was driven from the field—the village street. The precision with which they threw their imitation spears was a fine exhibition of dexterity.

Besides mimic war, the youngsters have their make-believe games of marketing, cooking, feasting, and housekeeping. The more expert among the lads make toy steamers in imitation of those running on the river, and it was interesting to see two lads approaching from opposite directions pulling the toy steamers behind, as they passed they would whistle three times each as a salute to one another, then came a long whistle as a sign to stop, and the "steamers" were supposed to stop at a beach and the two boys who were acting as captains and wearing any old hat they could find for the occasion approached each other, raised their hats, bowed, shook hands and then jabbered for a few moments in bits of French and any of their own syllables that sounded like French to them; then came the ceremonies of parting, and the whistling of a pretended farewell from their toy steamers and the *shu ! shu ! shu !* of the working engines. The lad pulling the steamer was engine, whistle, pilot, steersman, captain all combined, and seemed to enjoy it. The best model had the largest crowd of followers after it.

The following is a list of the games¹ I have observed played by the Boloki boys and girls:—

1. *Ndangu* (Lower Congo *ta mbele* is slightly different). The players form two lines (*mabenge*) facing each other. The first player A faces the first of the opposition line B; A throws up both hands and brings them down with a clap (*esaku*), and then darts out one hand, B does the same—claps his hands and answers (*tambola*), and if B's hand meets A's hand, A is wounded (*ajwe mpota*), and if A receives three wounds (*mpota iatu*) he dies (*awe*); if, however, the hands do not meet the first time A passes on to the next, and the next, until he finishes all in B's line or is killed, then the next to A tries until he is either killed or has been down B's line. Those who are "dead" stand at the bottom of their line. Three wounds on either side is a death. After all the "men" in A's line have played, B's line starts, and should he lose any they are redeemed in the following way: A's line lost say, five, and B's line lost, say four, A counts four of his five as redeemed and B counts his four as redeemed, thus over the first bout B has lost none and A has lost one. The game proceeds until all on one side are killed. The sharpest players stand at the top of the line.

2. *Ta mbali*, or hockey (Lower Congo *ta mbadi*), is probably a recent introduction by steamer lads from the Lower Congo, as the Monsembe lads had no open spaces for such a game until they played on the cleared opening in front of our station. I found hockey played most vigorously at San Salvador du Congo when I arrived there in the early part of 1882.

3. *Nkeka*, or wheel. The root of a plantain is cut into a wheel, and the players arm themselves with long sharpened splinters (*mbenge*) of bamboos; they divide themselves into two parties, which station themselves at about 30 or 40 yards from each other. Party A throws the wheel (*kula nkeka*) along the ground towards party B at the other end (*nsuku*), and as the wheel rolls towards them the boys of B throw

¹ For Lower Congo games I would refer the interested reader to *Folklore*, vol. xx, 1909, page 457.

the splinters at it, and if all miss, the other end chants: "Thud, thud, thud, bad marksman, die like a gazelle" (*Ju, ju, ju, bamai babi, bawa na npambi*); if some hit and some miss, those who hit say: "We have sent our splinters right through the rim of the wheel—the most fatal part" (*Yeke, yeke, nakeke na ndende na mimpesa*); if two hit, they say "Brothers truly" (*Jimi be*); if they all hit, they say, "It is absolutely lost and done for, *i.e.* it is no good looking for slaves from this side" (*Mampasa malambasana*). To win: Should B party hit the wheel with three splinters then three of A party become slaves, *i.e.*, they stand out of the game until they are redeemed; but if on the return of the wheel to A party that party hits it with four splinters they thereby redeem their three slaves, and place one of the other side in slavery. This continues until one side is in total slavery. The game excites great enthusiasm and encourages precision in throwing.

4. *Ngenza*.—A game in which small bamboo arrows are flipped at the fleshy mid-rib of a plantain leaf. Sides are taken, and the side with the best marksmen wins.

5. *Epapunga*.—They make a sucking noise with the lower lip inside of the upper, and the one not able to do it with the others (*Lembwaka lokela*) is killed, *i.e.*, drops out until all are killed but one, who wins.

6. *Ntamba*.—A kind of battledore. A ball (*Lingendu*) of leaves is made and thrown up, and is kept in the air by beating it with the palms of the hands.

7. *Nkulu-Nkulu*.—Two lines of boys sit on the ground opposite each other; the first lad of each line is called *moloi* (husband), the rest are called *bali* (wives). Each wife on the playing side interlaces her fingers, thus forming a hollow with the palms of her hands. The "husband" takes a small article and, passing his hand rapidly up and down the line of hands, he drops the article into one of the arched hands. The opposition side has now to discover who has the article, and the following conversation takes place:—Opposition says: "*Bananga-bananga*" (You players). Players: "*Eh!*" Opp.: "*Bankutu bengi!*" (Name of some leaves). Pls.: "*Eh!*" Opp.: "*Ba nyango ya bilulu*" (They are bitter leaves). Pls.: "*Eh!*" Opp.: "*Obe na nkulu, abete mungita*" (He who has the hidden article make the sound of *mungita*). Pls.: "*Kilili!*" Opp.: "*Bakunguika*" (Make it again). Pls.: "*Kilili!*" Opp.: "*Motu yona*" (That person). If the person thus pointed out is the hider of the article he shows it, and his side loses, and the opposite side takes its turn; if he has not the article, then the one who has it says: "*Eh! nabuti mwana*" (Oh! I have a child), and shows the article. It then counts one game to them, called *mwana wawi* (one child).

8. *Liba*.—A game of fives (and this very often precedes *peke*, or backgammon). In *liba* they throw up a palm nut, and then before it falls they swoop up with the right hand as many palm nuts as they can, and put them down and catch the descending palm nut before it touches the ground. The one who picks up the most in an agreed number of throws wins.

9. *Peke* (backgammon).—A number of holes are made in a circle on the ground, and the players either take as many palm nuts as they can in so many

handfuls, or procure them as in *liba* (see game 8), and the one whose nuts pass the holes of the other's wins; if his nuts fall short of the others, he loses.

10. *Lobesi*, or the game of pitch and toss with six counters.—The counters are called *mbesi*; the light side of the counter is *nke*, the dark side is *mpili*. The stakes (*libeta*) are taken up when the counters in three throws either fall dark side up (*mpili*), or light side up (*nke*), or three of each (*miu matu* = three eyes). The person putting down the stakes is *mobeti wa libeta*, the place of playing is *ekali*, and the turn to play is *ngala*, and *pula* is to demand a second throw of the *mbesi*. In this game there is always a great amount of gambling for brass rods and anything else of value. I never knew it to be played except for gambling purposes.

11. *Nsoko*.—For this game it is necessary to make a table (*juku*) of four lengths of plantain stalks, two 3 feet long, and two 2 feet long, and these are placed to make an oblong, and the space is filled with earth or sand in a concave shape, and over this some pieces of plantain leaves are carefully spread. The teetotums are made from the large calabar (*nsoko*) beans, and a hole is bored through the middle of each bean, and through the hole is pushed a splinter of wood to form a peg $\frac{3}{4}$ inch long on the under side and about $3\frac{1}{2}$ inches on the upper. This is called the *mundindi*. The *juku* and the *nsoko* being prepared, the players, as many as can sit at the table, take their places, and one takes the *mundindi* between the extended palms of his hands, and rubbing it to and fro to give it momentum, he drops the teetotum on the table, where it spins rapidly. In the meantime another has done the same, and on the two revolving seeds colliding, one is often knocked out, and then becomes the property of the one whose teetotum is left on the "board." If both are knocked out they begin again. If one teetotum holds the "board" for a round, the owner of it is *monzo* (the best spinner). He who procures the most seeds or beans belonging to the others is the winner.

12. *Molangu* (hoop).—The lads take sides, each side having a town (*mboko*) about 30 yards apart, and each lad has a piece of string from 6 to 8 feet long weighted at the ends. All being ready the hoop is rolled along from town A towards town B, and as it approaches a lad steps out and throws one end of the string at the hoop and lets the string run freely from his hand. His object is to entangle his string about the hoop. When the hoop stops and falls he goes and picks up one end of his string, and swings the hoop round his head as he takes it back to the throwing side. If he succeeds he has repulsed the enemy, and it counts one game to his side. If he misses the hoop, then the enemy has entered his town, and it counts one game to the town A, and town B has to roll the hoop to town A. If the hoop comes off while being twirled, then the side of the twirler loses, and he has to take back the hoop to his own town, and throw to the town of the enemy. Each lad steps out in turn for a throw of the hoop, and for a throw at the hoop.

13. *Nka*, or cat's cradle, is well known to the lads and lasses, and many an

hour is spent in working out different designs on their fingers and toes. The following are the names of a few patterns:—1. *Moleki na nkusu*, snare for a parrot, because of its similarity to a snare; 2. *Mwana muntaka*, girl, because of its large oval shape; 3. *Mwana lele*, boy, because it has a small waist; 4. *Julututu*, spider; 5. *Nkungu*, a triangular pattern.

14. *Nsau ya mai*, or water games, of which the following three are specimens:—1. *Nkoli* (crocodile). An active boy represents a crocodile, and diving beneath the water tries to catch the feet of his comrades, and others try to catch him. 2. *Tasana* (to find one another). One dives and keeps quiet under the water, while another searches for him. 3. *Munteko* (game of touch in the water). If one lad fails to catch or touch another, the others sing: "*Otenda tendaka yau nzala ya nkabu*" (You will not grow, you eat greedily, but are always hungry). The boy becomes angry at this taunt, and renews his efforts to catch one of them. The Boloki are good swimmers, great divers, and can remain under the water for a long time, and undoubtedly these water games help them to attain this at-homeness in the river.

The elder lads often got out their thin, well-balanced fighting spears, and having selected a standing plantain with a stalk from 3 to 5 inches in diameter, they would stand at from 40 to 60 feet away and throw in turn at the stalk. I have seen them pierce the stalk right through again and again.

The young girls had an interesting little dance, in which they formed a circle around one of their number, who was on all fours in the centre. As the girls in the ring sang about different animals, as the leopard, the hippopotamus, the crocodile, the elephant, etc., the one in the middle imitated the movements of the animal, and received ridicule or praise according to her ability to imitate the movements of the animal whose name was mentioned.




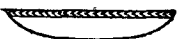

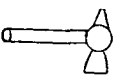


The men and women took very little part in any of the above games (except the men at Lobesi), but they took a large part in the dances that have already been described under previous sections, and in most of the dances the sexes were mixed. Wrestling of a rough and ready kind was occasionally indulged in by the lads, and round the fires of an evening stories were told with dramatic power, and conundrums (*lobulinginya*) were propounded and answered. Although Congo is a toyless land, and children are not catered for, yet from their loud laughter they seemed to get out of life a great amount of pleasure.

LI. SWIMMING.

All the Boloki are good swimmers and divers, and so much is this recognised that I have known it to be a proof that some men (under discussion) were not Boloki because they could not swim. The Boloki, living as they do near water, learn to swim at so early an age that it is regarded as much a natural action as walking. Infants of a few days are dipped and held under water several times twice a day—morning and evening. The hand over hand stroke is the most common, and they kick out with the legs, and tread water very well, but they


always dive feet first, never head first. They rarely if ever swim more than 20 yards from the beach, and I should not consider them long-distance swimmers. Through their water games (see Section L. GAMES), and through going under the water to set their fish traps, they have acquired the power of remaining under the water a very considerable time. The river varied in depth from 5 feet to 16 feet, according to the season of the year, and when the water was at its highest there was little or no fishing, consequently it was rarely they went into water above 10 feet deep. When a canoe was upset they were very dexterous in turning it over, bailing it out, and putting their possessions (such as were floating) back into the canoe, catching their paddles, and then climbing into their frail canoe again without upsetting it.


LII. NAVIGATION.

The canoes made and used by the Boloki are of two shapes. The first kind is used for travelling, trading, fishing, and fighting purposes. They are "dug"  out of solid trees, and measure from 10 feet to 50 feet in length, from 15 inches to 3 feet in width, and from 1 foot to 2 feet in depth. The larger the canoe the flatter the bottom, small canoes thus:—, and large ones thus:— the sides being slightly curved. The canoe's keel is thus:—. The outside top edge is generally ornamented in herringbone, chevrons, or parallel incised lines. The large canoes would safely carry forty paddlers and a quarter of a ton of gear. The canoes are made of cedar, mahogany, and other hard woods. The tree is felled and roughly shaped in the forest and then floated to the town of the maker. It is then drawn up out of the river and a rough shelter built over it to shade the worker and to keep the canoe from warping. A piece of *euphorbia candelabra* is tied to it, and the maker is not to drink water while he is working on the canoe, otherwise it will leak, and the charm keeps it from cracking and wards off evil influences. The maker chars as much off the outside and from the inside as possible; then he hews away with an axe of this shape  fixed in a handle . Then he has a small adze that looks like a toy  beside ours, and he has gouges in shape like an axe, only with a longer apex, thinner metal, and the sides turned thus:— near the bottom edge. The gouges are of various widths, and are tied to handles which are from 2 feet to 3 feet long, and are never struck with a mallet, but are driven by the force and weight of the whole body on the handle. The man puts the end of the handle against his shoulder, grasps it firmly with both hands, and then puts the whole of his weight and strength into the pressure. Canoe-makers are not confined to one class, but come from all classes—bond and free. Anyone who has a liking for the work gains skill in it by practice.

The chief generally sits about the middle of the canoe, and the crew is so arranged that the stern is down level with the water, and the bows well out of the water. The steerer stands right on the extreme stern of the canoe, and often a

branch is fixed in the stern to keep the backwash of water from entering the canoe. A good deal of water enters through the stern being so low in the water, and a lad to bail out the water forms, as a rule, a part of the crew. The paddlers stand along each side of the canoe, sometimes with one foot on the edge of the canoe, and sometimes with both feet down in the canoe. After hours of paddling they will sit on the edge of the canoe when passing a stretch of forest, but directly they near a town they are up on their feet and paddling in fine and proper style.¹ They paddle from 15 to 20 minutes on one side and then carefully change over to the other side. (See section on TIME.)

The paddles used are shaped thus :— and are ornamented with parallel incised lines down the blade, and the handle has often brass ribbon wound round it, and a brass knob on the top, or the last 6 inches covered with brass wire, or brass chair nails. For a large canoe there are two steering paddles of the same shape as the others, but with much longer handles. One is used by the principal steerer in the stern and the other by a man in the bows. The man in the bows is generally a person of experience and position. He gives the direction for steering, for he can see the course immediately in front of the canoe (which the back steersman cannot do), and if the canoe does not answer quickly to the back steering paddle, then the front steerer uses his paddle to assist it. The safety of the canoe depends on the quickness of eye, prompt directions, and sharp sane actions of the front steersman—the stupid steering of the stern steerer can be corrected without danger, but a foolish order or decision of the front steerer spells an upset. The front steerer called out “*Ebale*”² (river), and meant in steering to steer out into the river and away from the bank; and “*O nse*” (to the land), and that meant to steer towards the bank or land. Just in front of the bow steerer sat the boy whose duty it was to beat time on a wooden drum, or, failing a drum, on the edge of the canoe, to give time to the paddlers. Just behind the chief sat a lad or man with a skin covered drum who accompanied the singing of the paddlers (see under MUSIC for the character, etc., of this singing). I do not know a more pleasant native sight and sound than to see and hear a well-equipped canoe pass either up or down river; the rhythmical beat of the drums, the recitative chant of their songs in unison, the flashing of the wet paddles in the sunshine, and the swaying of the paddlers as they bend to dip their paddles in the water, all have a charm peculiarly their own.

The second kind of canoe is shaped thus :— These run from 6 feet to 10 feet in length, are very shallow, only $\frac{1}{2}$ to $\frac{3}{4}$ inch thick, and are made of light wood but durable. They are about 2 feet wide and about 5 or 6 inches deep. They are used for crossing swamps, marshes, creeks, ponds, and puddles, that abound in this flat

¹ To scoop water up and throw it from the paddles when passing a town or person is regarded as an insult and will be resented.

² *Ebale* is the old word for river, the new word *loi* was often used, and *o loi* (to the river) was a steering order and meant the same as *ebale*.

district. They will run easily over 6 or 8 inches of water, and will take two persons and some cargo.

There was no ceremony at the launching of a canoe. If the canoe was small the owner simply called his own family to help him push it into the water, but if the canoe was a large one he called his neighbours and friends to assist him. Every canoe before being launched was struck repeatedly by the owner or maker on the stern with his axe "to take away the weight." At the launching and beaching of a large canoe the helpers sang in chorus: "*Eyajaka we na mwali, beka mwali akula bwatu*" (You have always eaten your food with your wife, call your wife now to push (or pull) the canoe). This is their way of asking for a feed or a drink for helping to launch or beach the canoe. The owner of such a canoe either prepares a feast for his helpers or buys a demijohn of sugar-cane wine to share among them. This is not peculiar to helping with a canoe, for the same custom is followed in helping a man to roof his house, etc.

Punting poles were used in creeks and ponds, and also in the main river at low water. Canoes, as a rule, belonged to individuals, but large ones were sometimes bought by three or four families joining their moneys, and even by a village. In the bows of the river canoes were holes, one in each bow, and sometimes the canoe was fastened to the landing-place by a stick being passed through the hole and pushed into the ground, sometimes a rope was tied from the hole to a tree, and sometimes the canoe was sunk in the river by the bank and a few stout poles were rammed in alongside the canoe to keep it from shifting in the storms. The smaller canoes and marsh canoes were drawn high up the beach. Canoes paddled by large crews must give warning of their approach to a town by drumming and singing, or they can be treated as enemies and attacked.

The following words may be of interest as showing what a large vocabulary they have relating to canoes, etc. :—

Bwatu, general name for canoe.

Ebe, shallow, marsh canoe.

Epamba and *Motenola*, canoes of a medium size.

Yanda and *Nsanjako*, large canoes.

Mwanda, large canoe to take from 30 to 50 paddlers.

Mbaka ya mokia, stern of canoe.

Mbaka ya bo, bows of canoe.

Njaki, canoe bailer.

Mbamba, bracket for spears in a canoe.

Mokoi, edge of canoe.

Nsanga, fenced space in canoe for storing.

Libonda, canoe in the rough.

Luka, to paddle, and to go a journey by water.

Loselelete, landing place.

Mokenge, first canoe a person makes, generally given to his parents.

Ekoli, canoe gouge.

Mongi, skilled canoe-maker.

Ekunda, a large crew.

Libongo, place for making a canoe.

Ebolo, patch on canoe.

Mokondoko, shelter in canoe.

Nkengo, small size canoe.

Litanda, space or capacity of canoe.

Emeleng' emelenge, canoe with flat broad ends.

Libengi, canoe with platform fore and aft.

Koja, to beach a canoe.

Kula, to launch or beach a canoe.

Lokenye, track left by a canoe.

Njamba, a lift or ride in a canoe.

Ekanga, usable part of a broken canoe.

Nkai, paddle.

Libale, blade of paddle.

Losumba, steering paddle.

Mobala, shaft or handle of paddle.

Enda, to steer.

Mwendi, a steerer.

Ta mwiko bu, steer sharp round a corner.

Ekola, steer towards landing place.

These are a selection of the principal words, and their number could easily be doubled.

LIII. WAR.

One can hardly dignify the quarrels and fights among the Boloki and neighbouring tribes with the name of war. There was no army and no organisation, but all the men and lads took part in the fight that affected their family or their town. Their fights may be divided into three classes—the family fight, the town fight, and the district fight. The second and third often grew out of the first.

1. The family fight. If a family had a quarrel with another family in the town, neither guns, spears, nor knives were used in any fight that followed, but always sticks. I do not mean to say that no man ever drew his knife on another in a town quarrel, but that when two families in the same town deliberately fought each other they used only sticks. They had talked until they were tired; it was not a case for the ordeal: and the ordinary methods of judging a case had failed, so they resorted to sticks, and the party driven off the "field" by sheer weight of blows was the loser. The losing side would then pay up and the affair ended. The other families in the town scarcely ever took sides, but looked on and enjoyed the performance. If a family of one town had a fight with the family of another town then spears, knives, and guns were freely used. If family A of X town went to Z town to fight family B, then the other families in Z would stand ready armed to

assist their neighbours should they not be able to repulse the enemy ; and should the other families in Z town help the B family and drive out the A family then the other families in X town will help A family on its next venture into the enemy's town, and what was originally a family quarrel becomes a fight between towns. It may happen that B family has not the sympathy of the other families in Z town, and they will stand by and see that family driven out and their houses raided ; and it also happens that the A family has not the sympathy of the other families in X town and they will not join forces with it to fight the folk who have repulsed them. This is put to the test in the following way : The head of the defeated family puts a plantain leaf over his shoulder one evening and walks through his town calling out the reason for the fight, the family against whom he is fighting and asking volunteers to help him and begging such to meet him next morning outside his house ready armed to accompany him. Very often no one turns up, and the man has to consider whether his own family will have a chance of success if he continues the fight, or some other way be found for settling the affair. If the head of the family is an important man and of known bravery, and can command a large following of slaves and relatives, and there is every prospect of success, then a large number of volunteers will turn up the next morning. When the families in Z town see A family returning to the assault with so many volunteers they will at once go to the assistance of their hard-pressed neighbour, for the honour and safety of the town are at stake, and it now becomes

2. A town fight. The X town goes *en masse* to fight the enemy, leaving behind only the women, the children, the aged, and the sick. If X town is driven back by Z town and is unable to defend its town, then the women and children are carried off, the aged and sick killed, the town raided, everything portable is carried off, and the houses burnt to the ground ; but if X folk, although driven back, are able to defend their town, they will set sentries for the night, and next day send their biggest head-man with a plantain leaf over his shoulder to call up volunteers from the other towns with whom they are friendly, and then it becomes a war between district and district.

When men went to fight distant towns their wives were expected not to commit adultery with such men as were left in the town, or their husbands would receive spear wounds from the enemy. The sisters of the fighters would take every precaution to guard against the adultery of their brothers' wives while they were on the expedition.

Some put fetish "medicine" on their spears to give precision of aim ; others rubbed them with a vegetable poison made from the burnt ashes of *Munsansanga* leaves ; and others went to the *nganga ya ndemo* to render them invisible to the enemy. It is impossible to keep the arrangements for an attack secret. There are always friends and relatives who will inform their friends, etc., on the other side, and the drums are beaten and the fighters prepare for the attack. The head of the family whose quarrel it is arranges the fight and leads the van with his own family, slaves, etc. If necessary he takes counsel with the heads of the other

families helping him. I have never known them to make a night attack. They often lie in ambush, and will capture if possible those who fall into the trap, and will kill those who try to escape. Attacks were often made in the early morning soon after 3 o'clock. No scouts were used, but when necessary sentries were placed, and when they became sleepy they would arouse two of their comrades to take their places. The fighting could not be dignified with the name of battle, but was simply an affray, a *mêlée*, in which there was no order and no words of command. No truce was allowed, but when one side was tired of the fight or was getting the worst of it they sent a *Molekaleku* or go-between to arrange a meeting and the terms upon which blood brotherhood can be made. (See Section XLI. COVENANTS.) A man of conspicuous bravery who has killed a man receives congratulatory presents, and always has the first mug of wine served to him as long as he retains such pre-eminence, and he has no difficulty in procuring volunteers to aid him in any of his personal quarrels. When a man kills his opponent in a fight he cuts off the head and removes the lips, which he thoroughly dries in the sun, and then sticks in brass chair nails and wears them as an ornament with as much pride as the Victoria Cross is worn—it is the man's medal for bravery.

The Boloki when attacking a town will often divide into two parties, and one division will attack the place in front by water and the other by land. When chasing an enemy they throw their light, thin, fighting spears in the air, and these turn and come down head first and pierce the shoulders, and I have known some to enter the wrist and come out at the elbow, and others enter the top of the arm and come out also at the elbow. For warding off spears they have shields, and also 6-inch woven belts wound round and round the waist, and some have cuirasses of hippopotamus skin to cover the back. The cuirass fastens in front, and at the fastening there is generally a dagger in a sheath, which is easily drawn. There were a few flint-lock trade guns among them, but they relied on their light, thin spears and knives of various lengths and shapes. The Boloki, among the Congo people, are acknowledged to be the fiercest and bravest in a fight, and are greatly feared by the other tribes. Lads who could not obtain spears used sticks with sharpened points that had been hardened in the fire, and with these they harassed the enemy.

Prisoners taken are held to ransom, and if not ransomed they are retained and sold or killed according to the whim of the captor. The first prisoner taken by a man was given, as a first fruit, to the man's father, or failing him to his nearest relative. Women very often became the wives of their captors. The chief cause of quarrels and fights on the Congo is about women, and although the ostensible reason may be a drunken quarrel or a debt, yet if you will only push the matter far enough to its real origin you will find a woman at the bottom of it. Directly after blood brotherhood is made all may be friendly so far as seeming outward appearances may show, but I know from experience that the conquered are only awaiting their opportunity of revenge. (See Section XLIII. RELIGION, for omens about war.) Prisoners taken in war belong to their captors, and the same applies

to all kinds of spoil. The bodies of enemies are carried when possible from the field and eaten at a general feast. If the prisoners are not redeemed they become slaves, and while young ones may be amalgamated with their conquerors and eventually become part of the families of their owners, the elder ones who have their own tribal marks well defined take nothing but a servile position in the town of their new masters.

LIV. CUSTOMS.

Rudeness, discourtesy and lack of sociability are greatly condemned by the Boloki, and will be punished in *longa*, or the nether regions to which their spirits go after death; hence they are very punctilious about saluting each other whenever they meet, visit, or pass one another. The following are the morning salutations:—

Olongoi o! You are awake. Answer: *Nalongoi o!* I am awake.

Obimi o! You are out. Answer: *Nabimi o!* I am out.

Later in the day, when a man is passing another's house, he will say to the man sitting inside or outside his house:—

Ojali o! or *Ol' o moi o!* You are alive (exist or sit), or you are there.

Answer: *Najali o!* or *Nal' oni o!* I am alive, or I am here.

If the townsman sees the visitor first he says:—

Oy' oni o! You have come here. Answer: *Nay' oni o!* I have come here.

If the visitor stays a little time chatting, he says on leaving:—

Nake o! I go. And the other responds: *Oke o!* You go.

If a man is ill he is greeted thus:—

Okeli Boti o! You are a little better (*bolau* is understood). After his illness the greeting is: *Okeli bolau o!* You are good, *i.e.*, you are better. And the answer to the first is *Nakeli boti o!* I am a little better; and to the second, *Nakeli bolau o!* I am well.

To leave out the *O!* is for the greeting and response to lack cordiality, and the emphasis on the *O!* and the tone in which it is uttered are indicative of the feeling those greeting one another have for each other. *Bwanda* is the word used in greeting a superior, and the answer is *Bika* (these words have lost their meaning); but a superior greets an equal with the same salutations as an inferior does an equal, *i.e.*, *Ojali o!* *Obimi o!* *Oy' oni o!* etc.

There is another salutation used by a person to an equal, the answer to which is very various, and in fact every person has his own reply according to his circumstances, and the way in which he thinks his neighbours regard him at the time. A man greets another by saying *Losako*, blessing on you; and he replies *Ngai nkumbaku*, I am the one who is cursed, *i.e.*, the people in the town are always cursing him, or he fancies they are. Or the reply may be *Bansina*, they hate me, *i.e.*, the folk in his town do not like him; or *Ngai nsu yu mai*, I am a fish, *i.e.*,

everybody likes me just as everybody likes fish ; or *Nakalela bana ba ngai*, I am weeping for my children, said by one mourning over some great loss or bereavement. A vain person probably arrogates to himself a phrase indicative of his egotism, while a despondent one will use a sentence that does not truly reflect the attitude of his neighbours towards him, although in his humility he may think so. The word *tata* was expressive of respect, and as such was used by a slave to his master, and a son to his father ; and I have also heard a father call his son, and a mother call her son, by the same word *tata*, hence I think that while *tata* may be translated sometimes as father it is a respectful way of addressing a person. A woman never called her husband by his title, if he had one, but by his ordinary name. There was a curious saying after one had sneezed, viz., *Ngai nya motu mosusu*, "It is not I, but someone else," and this was accompanied by a clapping of the hands expressive of astonishment. It meant, I am surprised that you want to call away my spirit (the spirit is supposed to escape from the nostrils), I am not the person you think I am.

Food is served first to elders, and if visitors are present they take precedence according to age ; but in serving out sugar-cane wine and in walking on the road the chief or head of the family is first, and the others follow according to seniority ; then the wives of the chief in any order, and the other women behind them. In dividing food, as meat and fish, the one who divides takes the portion left after all the others have taken their shares, and in this way they have a guarantee that the portions will be equal in size and quality. If a saucepan of fish and another of cassava are put before five or six persons for them to eat, and although there is no division, but all help themselves from the same saucepans, yet they will be careful not to eat more than a fair share. Any greediness is condemned, and if persisted in others will refuse to eat with the greedy one, and he will become an object of ridicule in the village. As a rule, members of a family were polite to each other, and any departure from their rules of courtesy was regarded with disapprobation. Guests were treated with hospitality, and were protected by the family they were visiting ; and I never knew a guest to come to harm during a visit.

Women and children were treated with kindness—such kindness as they knew ; and I have seen men and women go through the town with their arms round each other's waist, not once or twice but many times. There was little drunkenness among the women ; but for a woman to become frequently drunk was not regarded with shame, but if she neglected her cooking through drunkenness she was condemned by all the women in the town. During fifteen years I knew of only one or two cases of drunkenness among women. It was not condemned in either men or women, but was looked upon with good-natured amusement. When a man went "on the drink," he pinned a leaf in his hair to show he was drinking, then if he abused anyone no notice was taken of it ; and if he entered into a contract which he afterwards considered was to his disadvantage he need not ratify it, because he had a leaf in his hair—a sign of his fuddled condition. Chiefs and

headmen were addressed as *monanga* (chief, lord), or as *mata* (headman, and first born of the family).

The natives were fond of water, and bathed frequently during a hot day; and children were bathed regularly twice a day. They washed their mouths both before and after a meal, and generally carried a native tooth-brush about with them and applied it frequently during the day. The tooth-brush was a piece of cane three or four inches long, frayed at one end. Both men and women would occasionally pay a hairdresser to comb out their hair nicely and plait it into three plaits, two standing out at right angles to the temples and one standing out above the forehead. They also frequently rubbed their bodies with palm oil and camwood powder, and would sometimes blacken their eyebrows. During her periods a woman was considered unclean, and was not allowed to cook her husband's food, and had to make a wide detour to avoid passing near any group of men; neither was she permitted to touch any fetish belonging to anyone else or her menses would be very profuse. The women shaved off the pubic hair, and kept shaved until they reached an advanced age. Each woman shaved herself. Men and women did not eat together, as it was accounted immodest and indecent for a woman to eat with a man, and it was *infra dig.* for a man to eat with a woman. The women had a few words used only by them—just two or three swear words and oaths; and a few words used only by them for utensils, but when necessary they would use the ordinary or men's words without any hesitation. A woman is unclean for a month after confinement, and then she washes and is accounted clean, although she will have washed every day of the month. During this time no man will go near her, nor will a man eat anything she has cooked, but children who have not arrived at the age of puberty will visit her house freely.

LV. REPRODUCTION.

Boys and girls from an early age until puberty have free intercourse with each other, and I believe that later there is no public condemnation if the girls are not betrothed. It is only when money has been paid for the exclusive rights in her that adultery is condemned—it is an infringement of another person's rights. It is rarely that one sees an illegitimate child, either they have means of preventing pregnancy or of causing abortion. Then, again, likely young women marry at an early age, and should a child be born soon after the marriage, the husband has no particular objection. Among a people like the Boloki no registers of birth are kept, and in writing about their ages there is no pretension to accuracy. It is generally agreed among us that menstruation begins at twelve years of age, and girls marry at about sixteen to eighteen years of age. Premenstrual connection is desired by men because they like it, and also because they can indulge freely and there is no palaver, and it is not until the beginning of the periods that girls are guarded from promiscuous intercourse. It must be remembered that a man has to buy his

wife at a very heavy price, and if his family is not able to help him, he, unless exceptionally fortunate, cannot save enough to procure a wife until he is thirty or even older.

Enlargement of the breasts is the only sign accepted as a proof of pregnancy, and about three months before confinement the woman goes to a *nganga* (see Section XLIV. MAGIC), who puts certain pigments on the stomach, and from that time the husband has no further intercourse with her, or his luck in hunting, fishing, etc., will not be good. In childbirth the woman lies on her back, and when the child is delivered the "cord" is not cut until the placenta comes away. The midwife, who is an expert in her way, attends the patient and licks the child after birth to clean it. Labour is generally very short and easy, and in an hour or so the woman is walking about. Death during delivery is very infrequent, but should it occur no attempt is made to save the child—"If the mother dies the child dies." The period of suckling varies from six to eight months to fifteen to eighteen months, but never longer, and any woman may suckle another woman's child. During the suckling period the husband has no sexual relations with his wife, or the child will become thin, weak, and probably die.

Abortion was produced by the drinking of a bitter decoction made from boiling *kungubololo* leaves, which is said to be very bitter, like quinine. There are other modes of procuring the same results, but my informant was not acquainted accurately with them. Abortion was practised in order to avoid the trouble incurred by children and from hatred towards the husband whom the woman might desire to leave at any time, and if she had children by him her relationship to her husband was so complicated thereby that she could not easily leave him. Of late years—from 1898 until the present time—the maladministration of the Congo Free State has caused a tremendous decrease in the birth-rate: (1) From deporting the virile young men of the towns to act as soldiers, labourers, etc., leaving only the old men and boys in the towns. (2) Through the constant state of alarm in which the people lived; the daily expectation of their towns being burnt down if they failed to pay to the last portion the exorbitant and oppressive tax demanded of them every fortnight. The women refused to bear children, and if they became pregnant they caused abortion, for they said: "It is difficult enough to save ourselves when the State soldiers arrive, and how could we save our children?" There is no doubt that previously to 1898 the birth-rate exceeded the death-rate, for it will be seen under Section XLVI. on HISTORY, that the people had swarmed again and again like bees from one locality to another, and had wedged their way in between other peoples and established large, new towns.

The death-rate among children was very large, for the ignorance of proper treatment in illness, colds, fevers, etc., is such as to account for many deaths. It is truly a survival of the strongest; and this undoubtedly accounts for the absence of cripples, delicate persons, and feeble-minded folk. It is a struggle for life from birth upwards, and only the fittest survive in the fight. My carefully considered opinion is that on the Upper Congo polygamy did not tend to large families, but the reverse.

I have known a man with twenty-five wives have only one child really his own. Another man had eight wives and only five children, and they were all by one wife. Another had five wives, and he had four children by one wife and none by the others, but one had a child by another man, and he counted it as one of his own. I found the same state of things on the Lower Congo, viz., that polygamy meant small families, and the reason was not far to seek—a few old men owned most of the women and the strong young men were without wives, and this resulted in a great amount of adultery, and the women to screen their lovers prevented pregnancy or caused abortion. On this subject I wrote a long letter to the *West African Mail*, and it was published in the September or November number of 1908.

If a woman does not give birth to a child, she will take her sister to her husband that he may have a child by her. This is called *boko loboja*; to give one in place of—. If a man has one child by a wife and no more, he thinks someone has bewitched his *liboma* by taking the family's stock of children from there and hiding them. It appears that every family has what is called a *liboma*, it may be a pool (*etema*) in the bush or forest, or on an island; it may be a creek (*mojiba*), or it may be a Bombax cotton tree (*molondo*). These places are the preserves for the unborn children of the family. The disembodied spirits (*mingoli*) of the deceased members of the family perform the duty of supplying these preserves with children to keep their families strong and numerous. They have misty ideas as to how these *liboma* are supplied with children (called *bingbongbo*), but I have a suspicion that underlying the *liboma* is some idea of reincarnation—some thought there was a rebirth of certain deceased members of the family, and others thought that the *mingoli* had spirit children, and such were sent to the *liboma* to be endowed in due time with bodies. (See *nganga ya bingbongbo* in Section XLIV. MAGIC, for the power these unborn spirits are supposed to have over the health of boys and girls.) If a man does not have a child by a wife, then she is simply barren (they always think it is the woman's fault), and there is nothing more to say; but if he has one child by her and not a second, then he thinks that the other members of his family have bewitched her so that she might not be able to get another child from the *liboma* that there may be more for themselves; but should none of the family bear more than one, or at most two, children by their wives, then some other family through hatred or jealousy has taken by witchcraft the children from their *liboma* and hidden them. Only the family to which the *liboma* belongs can give birth to the unborn spirits there.

If a man finds a snake called *mwaladi* (snake with red marks on it) lying by his side when he awakes, he takes it as a sign that he will have a child by his wife. If a woman is sitting or lying down and a *mwaladi* snake approaches her she remains perfectly still, and if it passes near her she thinks it is an omen that she will soon become pregnant. She sprinkles a little powdered camwood on the snake as it glides by her. The child born after an omen of this kind is not regarded with any special respect, nor is a special name given to it.

The afterbirth is always buried, but the umbilical cord is hung in a plantain

tree, and the fruit, when matured, is cut down and cooked with fish to make a feast for any friends and neighbours who care to partake of it. This plantain is called *likemba ja nkoko* (the umbilical cord plantain), and the original idea underlying the feast was that the cord imparted certain properties to the plantain that made them a counteractant to sterility. There was much sterility.

Twins were not frequent, but when they did come they had to be treated properly. Three days after the birth of twins (*masa*) the mother took them in her arms and danced in front of her house before the villagers, who joined in a chorus which they sung over and over: *masa e maolela*, the twins cry for you. The mother was decorated with leaves, sprays of leaves, and twigs, the same as for an ordinary birth. These were made into garlands for her head, stuck into her waistbelt, and fixed on her wherever it was possible. At this ceremony the names are given which are the same for all twins, and these names are retained through life. Other folk can change their names according to fancy, but twins never. The first born of twins is called *nkumu*, and the second *mpeya*. The first born is always carried on the right arm, and the second on the left arm. Whenever the mother replies to a salutation she must give two answers, one for each child; and should she greet anyone she must duplicate her greeting, that each of the twins may be recognised. She must carry the dual idea further than that, for she must eat not with one hand, but with both, that each child may be properly nourished. Presents must be given in duplicate, or the one not receiving a present will fret, become ill and die, for the sickness and death of either child arises from carelessness in the observance of these rules. The twins are expected to cry together, rejoice together, and should they fail in unanimity in these functions of joy and sorrow it is because one is sulky on account of the above rules not having been properly observed. When one of the twins dies the mother borrows a baby of the same age to put with the living one that it may not fret.

LVI. ABNORMALITIES.

There are rare cases of albinos (called *yeme*), and they are regarded with respect, and although they may marry, there are many women who, through fear, refuse to have them. The skin is a dirty white with a tint of pink in it. The hair is curly and very light, and the eyes are red and intolerant of the light. They are repulsive looking, and one is glad to turn the eyes quickly in another direction. Those I have seen were men, well developed and healthy looking, except that the skin had some rash on it, which may have been due to the strong rays of the sun on a delicate skin. They suffer considerably from the strong sun, probably as much as any white man would suffer who had to go about in tropical Africa in a nude condition. There are infrequent cases of auburn hair (*nswi ya so*), but the eyes are not different from those of other people.

With the exception of supernumerary toes and fingers, the deformities I have seen have been due to disease. People with a sore on the under part of the heel

often walked on the toes or side of the foot so long that at last they could not walk properly.

Umbilical hernia was very common, scrotal hernia was frequent, and hernia in the groin was occasionally seen. I also met with a few cases of elephantiasis, and a non-infectious form of leprosy—the back of the hand and up the arm nearly to the elbow was covered with hard, scaly, white skin.

LVII. ARTIFICIAL DEFORMITIES.

One artificial deformity has already been described, viz., the formation of the cock's comb (*likwala*), the tribal mark up the forehead. They have another—the cutting of the two upper front incisors to sharp points **UVVU**. I once said to a native: "Your teeth are like a dog's"; and he instantly replied: "White man, yours are like a bat's, and we don't like bat's teeth." They pay two brass rods for cutting the teeth, and two brass rods for every time they bite the operator. (See XLVII. INITIATION.)

The eyelashes are pulled out as a mark of beauty, and the eyebrows were sometimes shaved off.

LVIII. MEDICINE AND SURGERY.

The following is a list of the diseases, etc., from which the natives suffer. Perfection is not claimed for the list, but it is fairly complete:—

1. Scrotal hernia. *Liboke* denotes an early stage, and the word also means a parcel, a bundle; *benda* is a later stage, when the hernia is large; and *linkuku* the last stage, when the hernia reaches the knees. I have noticed two or three examples of this.
2. Paralysis from sickness, *boboku*. I never saw a case of this.
3. Small-pox, *kokotu*. We had an epidemic of this disease about 1893. Some died from it, and many others carry the marks to this day.
4. Bad diarrhœa, *bolete*, is supposed to be the result of being cursed.
5. Bleeding at the nose from any cause, *bololongo*.
6. Insanity, *bomwa*; and 6A, mild insanity, in which there is extreme foolishness, *lemanana*.
7. Madness of a violent nature, *mokalala*.
8. Idiocy, *bowewe* and *cwelewete*.
9. Backache from sexual excess, *bongembe*.
10. Cough, *chokôtu* and *yoko*. Coughs and colds were very common.
11. Crack in skin, *etena*. This was common and very troublesome, especially when on the sole of the foot. The hard skin would take months to heal.
12. Crippled limb, *etengumwi*. This was very rare, and resulted either from a wound received in a fight, or from a burn, or from walking

on the toes, heel, or side of the foot when there was a crack in the sole.

13. Nervous condition, *jita-jita-jita*, twitching.
14. Bad fever, *molungi juku juku*, heat or fire plenty plenty. Fevers were frequent among the natives, but yielded to simple treatment. The temperature often went very high.
15. Poor state of blood indicated by frequent crops of boils breaking out, *libembe*.
16. Great debility, *lela*.
17. Patches of pustular sores, *lifwanja*.
18. Sore throat, *lilele*.
19. Yaws, *lingala*, more often used in the plur., *mangala*.
20. Gonorrhœa, gleet, *lisabu*.
21. Puffy condition of the body, probably dropsy, *lontutu*.
22. Blindness, *lulanda*, not common.
23. Sleeping sickness, *luwa* and *yobi* and *makwata*.
24. Form of non-infectious leprosy in which the skin becomes a sickly white, indurated, cracked, and peeling. It is found generally on the hand and arm below the elbow, and is called *munkana*.
25. Very bad rheumatism, *yambaka*. Persons suffering from this complaint must not burn the wood of a certain tree called *lobaka*, or the pain will become more acute.
26. Deep seated ulcers of syphilitic origin, *mundongo*.
27. Intestinal worms, *munsobi* and *munsembe*.
28. Profuse menstruation, *mwajakongo*.
29. Dysentery with much blood, *mwajakongo*.
30. Ague fever, *nyankili*.
31. Chest complaints of all kinds, as pleurisy, pneumonia, etc., are called *ntulu*, chest; to feel or suffer from such is *oka ntulu*, hear, *i.e.*, feel the chest. They also called it *mobanji*, the side or ribs.
32. Elephantiasis, *mungita*. Not very common.
33. Abscesses and boils, *litunganaka*.
34. Umbilical hernia, *muntolu*.
35. Asthma, *likoko*, *i.e.*, wheezing of the chest.
36. Scabies, *mputu*.
37. Fits and convulsions, *bonsinga*.
38. Extreme debility and sciatica, *yombi*.
39. Boil, *ndala*, very frequent.
40. Mild form of rheumatism, *mokoko*.
41. Cataract of the eye, *elalei* and *molondo*. Common.
42. Blind in one eye, *muntelele*. Occasionally seen.
43. Ganglion on back of hand and wrist, *etai*.

In addition to the above, there were stomachache, toothache, soreness of gums, headache, sympathetic buboes, ulcers caused by chigoes (or jiggers), etc., etc.

The Boloki attribute diseases to several causes, such as broken tabus, witchcraft, certain evil spirits, as the *mingoli*, or disembodied spirits; the *mēte*, or spirits of diseases, *i.e.*, spirits that give individual complaints; *mieta*, or spirits that give family complaints and epidemics; and *Ejo*, the spirit of wealth, who frequently demands human sacrifice, and some people who have bad diseases and die are regarded as sacrifices to this spirit. Cursing is also considered as being able to cause complaints.

Mono is the general name for medicine, and may mean a daub of simple pigment on the affected place, or some complicated concoction that has taken some time to prepare, and much thought to arrange. From a study of their diseases it will be seen that they fall into two classes:—(1) Those whose symptoms are observable and easily diagnosed, as gleet, dysentery, insanity; and (2) those whose symptoms, while apparent, are difficult to diagnose because their causes are hidden, as those named *lela* (great debility) and *luwa* (sleeping sickness). The former are regarded as simple sicknesses, called *bokono*; but the latter are put to the credit of the *mēte* and other spirits, or to the evil influence of *moloki* or witch.

When the sickness is *bokono* herbs are used, medicines are made, and tabus inflicted; when the sickness is caused by the *mēte*, *bitoli* or stick charms are erected before the patient's house, and he is put under various tabus; and when the sickness is by the *moloki* or witch, the first object is to discover the witch, or failing that, by powerful charms to counteract and overcome their malign influence. There is another cause of disease, but it is not discoverable until after the patient's death, when the *nganga* holds a post-mortem examination on the corpse to find whether the man was bewitched to death, or in trying to bewitch someone else was conquered by the charms of his opponent and paid the penalty with his life, *i.e.*, A wants to kill B by witchcraft, but B's fetishes, charms, etc., are so strong that, in protecting their owner B, they also overcome the witchcraft of A and kill him. The *nganga's* verdict that the deceased died as the result of his own witchcraft has a very interesting and widespread effect on the people. It exonerates the *nganga* from all blame, for while he may drive out *mēte* or spirits, and deal with other spirits by his powerful charms, and while he may overcome the witchcraft used by someone else against his patient, if he is innocent of witchcraft himself, yet how can it be expected of him to save a patient who himself is full of *likundu* or witchcraft? Thus, to "save his own face," the *nganga* after his post-mortem examination declares in ninety-nine cases out of a hundred that the deceased died by his own witchcraft. The result of the verdict is that the corpse is buried and no one is accused of being a witch, and consequently no one has to take the ordeal. During my residence among the Boloki, although many took the ordeal for various reasons, I never heard of one taking it for bewitching a person to death. The verdict generally given was *awi na likundu*, or he died by his own witchcraft, and many a time I have heard the friends of the deceased protest

against this charge, for they considered it an insult to the memory of their departed friend, and insisted that he died by the act of God (*awi na lo la libanza*). Some sicknesses are especially regarded as the result of breaking a covenant, as dysentery or *bolete*, or the outcome of a broken treaty, as wounds and death in a fight, or the result of a wife's unfaithfulness while the husband was away at the fight, as wounds in a fight.

In cases of simple *bokono* medicines are made from herbs for inward or outward application, fomentations of leaves are applied, and massage is often beneficial, and in many cases charms and amulets are supplied to the patient. In cases of serious *bokono*, as small-pox, dropsy, etc., one who has recovered from the sickness very often sets up as a healer of the same, for who knows better how to cure an illness than one who has had it? These healers of specific diseases were not *nganga*, and were not regarded as such; and if they failed to cure, the patient was taken to a *nganga* as the last resort. The fees of the former were moderate, as a quack doctor's compared with the fees of the professional man. Of these healers there were a large number, and it would be impossible to give an outline of their practices, for each followed his or her own method, and tried to keep that method as secret as possible, and even when fomentations or herb decoctions were used, the names of the herbs were kept a profound secret. Simple massage was a favourite operation, and much enjoyed by the patient, and its curative qualities were not placed to the credit of friction, warmth, magnetism, but to the fetish power of the rubber. A more complicated kind of massage was practised by the *nganga*, during which he pretended to extract all kinds of things—palm nuts, stones, and bits of iron—from the patient.

Cupping, called *nyunya*, was often practised, and has already been mentioned under a previous section. Sometimes it was simple bleeding, and at other times it was cupping proper with horn and suction. The part to be benefited was snicked with a knife, and a horn which had at the upper end a hole was put over the cuts. The operator put a pill of clay or soft wax into his mouth, sucked at the hole, and with his tongue put the wax over it. This he repeated until the air in the horn was exhausted and then the blood ran freely. The clyster was used for relieving pains in the stomach. A small calabash was filled with water in which some herbs had been boiled. The patient laid on his stomach and the reed tube was inserted in the rectum and liquid from the calabash was poured into the reed; but sometimes they had a calabash with a very long neck, and this was inserted and the liquid allowed to gravitate into the bowels. Of late years the natives have imitated the white folk and have used soapy water. The native name for the clyster is *njungo*.

As stated above, most of the diseases in the list are called *bokono*, sickness, illness, complaint, etc., and it was only when they did not yield to the ordinary simple treatment that they were regarded more seriously as the result of witchcraft, or obsession by a spirit called *bwete*, e.g., an ulcer would show itself and be treated with fomentations, etc., but if, as sometimes happened, the ulcer spread and drained

the strength of the patient a *nganga* would be called and the cause sought for either in witchcraft, the breaking of a tabu, or the action of a *bwete* or spirit. Those complaints numbered 16, 23, 25, 30, and 39 are supposed to originate in one of these ways, and it is the object of the *nganga* to discover which, in order to use the right means. The *nganga* beats his drum near the patient, talks excitedly, chants various phrases, the sense of which neither he nor the people very often understand, but the lilt of the metre together with the rhythm of the drum make the patient sway to and fro and have a hypnotic effect on him. When he is worked up to the right pitch, the *nganga* asks him, "Have you eaten anything (*i.e.*, have you broken a tabu)?" The patient takes no notice. "Have you done anything (*i.e.*, have you broken a covenant)?" The man takes no notice. "Are you bewitched?" or, "Are you bewitching anyone?" To these questions no answer is given. "Have you a *bwete*?" The patient jerks and twitches his body, beats his arms, and sways more vigorously, and thus it is known that the patient is obsessed by a spirit or spirits, and the next thing is to discover whether the *bwete* is *bwete bwa lela*, or *luwa*, or *yobi*, and so on, and that point being decided by the jerking of the patient's body the *nganga* proceeds to make the necessary charms and put the man under the proper tabus. This ceremony is called *mobaŋu*. There are modifications of this ceremony, in which only rattles are used, and not drums, and many women sing and shake rattles round the patient, who lies in the middle of the ring well anointed with oil, or there may be only a few present, and the drum is used, and the patient taken inside a mat enclosure with the *nganga*, but the principle is the same.

It will be noticed that the diseases originated by the *bwete*¹ (plur. *mēte*) or spirit are not those that can be seen, as dysentery, dropsy, gleet, etc., but unseen diseases marked by weakness, debility, lack of energy, etc., and are caused by the *bwete* affecting the life springs, that is the soul of the individual.

The following are some of the methods used by the *nganga* in dealing with the more occult diseases of obsession by *bwete* :—

1. *Bowa*.—The patient lies on his back. The *nganga* has a saucepan of boiling water by his side. He kneels by the patient and shakes some leaves over him, dips his hand in the water and rubs the stomach of the sick person, and in a short time shows a palm nut as having come from the patient. This is repeated again and again, and each time a palm nut or a stone, or a piece of iron, is shown as having come from the patient, and these are taken as evidence that the *bwete* or spirit is being expelled.

2. *Kuya lela*.—A drum is beaten by the *nganga's* assistant. The *nganga* ties strings with many knots in them round the patient's wrists and neck. He then rubs him with a preparation of palm oil and camwood powder, puts a tabu on him, and makes and erects some *bitoli* sticks. The patient is told that whenever he eats he must throw some of his food over his shoulders (he must not look round) for the *bwete* or spirit to eat. *Kuya* means to turn over, and *lela* is a disease caused

¹ See Section XLIII, RELIGION, for an account of the *bwete* spirit also for the *mweta* and *ejo*.

by a *bwete*, or it is the name of the spirit that causes certain symptoms, hence *Kuya lela* is to turn over or conquer the evil spirit called *lela*, its full name being *bwete bwa lela*.

The following are some of the remedies used:—*Kuta* is to heal quickly the cuts of a badly wounded man by placing him on a shelf and lighting a fire under him so that the smoke enters the wounds. *Ngele* are leaves for drawing boils and abscesses to a head. *Moteba* leaves are boiled and rubbed on a patient suffering from sleeping sickness. *Longele* is brass rod. Some medicine is tied to a brass rod, and it is then worn to strengthen the arm or the feet. Some wear it for rheumatism. *Makulu matuki* leaves are good for sores and wounds, and the juice of the leaves is put into the eyes for sore eyes, and some eat the leaves to cause pregnancy. *Makalala* are small sticks of powerful "medicine" used for soothing the violently mad.

Ligatures are tied—one above the wound, and the other below the wound—for a snake bite, and some bitter plant (*Bololo*) is given to the bitten person to chew. The *nganga* also "scrapes the wound to get out the teeth left by the snake." There are persons and even families who handle snakes with impunity, and these are supposed to have snake medicine. Such a person is sent for if the patient is suffering badly from a snake's bite, and on his arrival he and the bitten person will clasp each other's right wrist, and the snake-man will beat the arm of the bitten person to drive the *ngenge* or poison from him into himself. I have never heard of a death from a snake bite, but I have seen nervous people very scared after being bitten by a snake.

There is a word *yengola*, which means to kill or drown a slave who is too ill to recover.

Natives endured the heat much better than the cold. The palm oil and camwood powder, used so freely as a cosmetic, protected their bodies from the direct rays of the sun, and I think the same cosmetic was a slight protection from the cold air; but in the cold they seem to crumple up and lose all energy. Wounds from knives and spears healed readily. Blood poisoning was very rare. Syphilis is to be found, but it is not common. I believe it came with white people and Zanzibaris. The interested reader should, in connection with this section, read the Section XLIII on RELIGION, especially that part dealing with the different spirits, and also Section XLIV, on MAGIC and MAGICIANS.

SUPPLEMENTARY NOTES TO PART II (*supra*, Vol. XXXIX, pp. 416-459).

Section XXX, p. 427. SLAVERY.

A slave badly treated by his master can run and break the *eboko*, or fetish saucepan, belonging to one of the *nganga*. Then the *nganga* will demand such a heavy price from the master (as he is responsible for the action of his slave) that he will prefer to leave the slave in the *nganga's* hands to paying the redemption price. Public opinion would be very pronounced against a slave who broke

the *eboko* for insufficient reasons. A female slave would not break the *eboko*, because she would be worth more than the compensation demanded, and on its payment she could be tied up by her former master and sold far away, after a bad flogging. She would run away and be done with it; but a male slave who did not want to leave the neighbourhood would break the *eboko* of a *nganga* of the neighbourhood and thus remain in the district and be better treated.

Section XXXV, p. 440. MARRIAGE.

Breaking the *eboko*, or fetish sancepan, is used for another purpose: a man's wife has been stolen from him, and all other means having failed to regain her he goes to the *nganga*, tears his cloth, and breaks the *eboko*. This action calls attention to the case and arouses widespread interest. The *nganga* must take up the case or he will lose his dignity as a *nganga*, and folk will lose their respect and fear for his *eboko*. So he places himself at the head of a movement to punish the wife stealer, and the men who would not have helped the husband volunteer to fight under the *nganga*, and when the woman is captured the husband has to pay heavy damages for tearing the cloth, breaking the *eboko*, and for the help of the *nganga* in the fight. He will try to recover all the damages from the stealer of his wife.

SUNDRY NOTES.

Bull-roarers were known and made; but the elders did not like the lads to play with them, and they gave as their reason, "You are calling the leopards." This was because the whirl of the bamboo made a sound like the growling of a leopard.

Spirit in trees.—When a person wanted to take the rootlets of the *nka* tree for ordeal purposes, he selected the tree and then spread a leaf on the closed fist of his left hand and struck it with the palm of his right hand, and if the leaves on *nka* tree trembled he knew that the tree was strong and fit for use; but if the leaves remained quiescent, it was a sign that the *nka* was weak and unfit for use so another and another tree was sought until he found one that responded to the striking of the leaf.

First teeth.—Boys and girls when their first teeth came out always carefully hid them, for if they were found by anyone no other teeth would come in their place; but an adult would throw his teeth anywhere, for no other teeth could take their place.

A funeral rite.—Members of the deceased one's family slept for two or three weeks on leaves; then they had a drinking bout of sugar-cane wine to which all the town was invited, and after that they returned to their ordinary sleeping mats.

BRITISH EAST AFRICA.

KIKUYU CUSTOMS AND BELIEFS.

THAHU AND ITS CONNECTION WITH CIRCUMCISION RITES.

By C. W. HOBLEY, C.M.G.

[WITH PLATES XXVIII—XXX.]

Thahu, sometimes called *ngahu*, is the word used for a condition into which a person is believed to fall if he or she accidentally becomes the victim of certain circumstances or intentionally performs certain acts which carry with them a kind of ill luck or curse. A person who is *thahu* becomes emaciated and ill or breaks out into eruptions or boils, and if the *thahu* is not removed will probably die. In many cases this undoubtedly happens by the process of auto-suggestion, as it never occurs to the Kikuyu mind to be sceptical on a matter of this kind.

It is said that the *thahu* condition is caused by the *ngoma* or spirits of departed ancestors, but the process does not seem to have been analysed any further.

We are now in a position to realize the attitude of the Kikuyu mind towards *thahu*, and it is considered that the term curse, in its medieval sense, expresses it. Everyone will remember in the *Ingoldsby Legends* the pitiable condition of the Jackdaw of Rheims after he had been cursed by the Cardinal for stealing his ring; now this would appeal to a Kikuyu, and he would at once say the jackdaw was *thahu*. In one of the cases of *thahu*, quoted hereafter, it is possible for a person maliciously to lay a curse on a whole village by breaking a cooking pot, and in another instance, a father can lay a curse on his son for disobedience, and we thus have parallel instances from both higher and lower civilization, the Cardinal curses the jackdaw with the help of the supernatural powers with which he is invested by virtue of his sacred position, but in the lower culture it is apparently held that any person can inflict a curse by invoking the supernatural powers of the *ngoma* or spirits of the dead ancestors.

Truly the position has changed but little, but it would appear probable that as the priests had gained power they arrogated to themselves the monopoly of laying a curse upon their flock; the freedom with which people use the conventional formula of curses to this day is evidence, however, that the power to inflict a curse was formerly at the disposal of all. It is important to realize, however, that when curses were believed to be effective, and if malicious, were punishable by native law, people were more careful about the custom than they are to-day when all belief in the power of a curse has died away.

Some people use the term ceremonial uncleanness to express the meaning of *thahu* but, as far as my enquiries go, the phrase inadequately explains the Kikuyu ideas on this question. Acts which cause a person to become *thahu* are often found to be enumerated under the heading of "prohibitions" and "*tabus*."

The similarity between *thahu* and *tabu* is somewhat striking and worth considering. *Tabu* appears usually to be applied to some act or object by a man who often acts in the dual capacity of ruler and magician. There is as far as can be discovered no record of a Kikuyu *thahu* having been imposed by any known personage, but these beliefs must have originated somewhere and it may be that they were originally imposed one by one by great medicine men in former times and have thus become incorporated in what may be termed the tribal religion.

The removal of the curse is effected by a process of lustration which, in the more serious cases, has to be done by the *mundu mugo* or medicine man, and in others by the members of the native council or *kiama*; the latter is an interesting case of the overlapping of judicial functions and those of a sacerdotal character.

The lustration ceremony is almost always accompanied by the slaughter of a sheep and anointment with the contents of the stomach, and in some cases the white diatomaceous earth called *ira* is used; the purification is called *tahika*.

In a few cases smoke is used as a purifying agent and seems to be considered effective in some more trivial cases.

The reality of this aspect of Kikuyu life and thought may easily be underestimated, but it is important that all who wish to gain a deep insight into native affairs should understand it and give the phenomenon its true value. To give the question a practical application it may safely be said that no Kikuyu native who becomes *thahu*, during the course of his employment by a white master, will rest until he has been freed of his curse or ill luck, and will probably desert with wages due to him in order to get rid of it; he cannot afford to wait, the risk is too great.

There is another curious side of the question; a Kikuyu when he is circumcised undergoes this rite either according to the old Kikuyu custom or according to Masai custom; the physical operation and result is the same, but the ceremonial varies, and for some unfathomed reason a man who is circumcised Masai fashion can do certain things or encounter certain circumstances with impunity which would, if he had been circumcised Kikuyu fashion, render him *thahu*. This is a very curious fact, and the Kikuyu themselves do not seem

to be able to give any reason for it; the matter should, however, be made the subject of further research, as my information is derived from the southern branch of the tribe, and many customs which are dropping into disuse in that area, and thus losing their inner meaning, are found to be very much better known in Kenya Province or Mwaitumi as they term it.

'List of *Thahu*.

I will now proceed to give a list of *thahu* which I have collected with the assistance of Kinanjui and his *kiama* or council of *athuri* or elders; the question of the two classes of circumcision will be discussed later.

(1) If a small child dies and the mother carries the body away into the bush, the woman is *thahu*, and if the husband cohabits with her before she is purified, he becomes *thahu* and the woman is cleansed. The man carries the *thahu* away with him, and what is worse, may transmit it to his other wives. If the man becomes *thahu* in this way it is much more serious for him than the woman, and a *mundu mugo* or medicine man has to be called in: the woman has to be purified by three elders, *athuri ya Kiama*, and an elder woman *murui*. For instance, if a man has two wives and the younger had become *thahu* in this way, the senior wife would shave the head of the woman who was to be purified, and a sheep is killed, and she is smeared with *tatha* or the contents of the stomach.

This *thahu* only falls on those who have been circumcised according to Kikuyu fashion: if the man has been circumcised according to Masai custom he does not become *thahu*.

(2) If a woman who has assisted at a birth cohabits with a man before the end of the umbilical cord of the newly born child has shrivelled up and come away, and before she has ceremonially bathed herself, the infant, although not her own, will become *thahu*. To remove the curse from the child the principal elder of the village kills a sheep and smears the woman with *tatha*, the contents of the animal's stomach, and thus cleanses her.

This applies to those circumcised either according to Kikuyu or Masai fashion.

(3) If a man touches or carries a corpse he becomes *thahu* until he is cleansed, the lustration is performed by members of the local council of elders, *athuri ya Kiama*, and the final purification by a *mundu mugo* or medicine man: if he cohabits with a woman before he is cleansed she also becomes *thahu*.

(4) Stepping over a corpse—this inflicts a *thahu* of a very serious nature, the person contracts a sickness called *mangu* (possibly leprosy is meant). He is said to break out into an eruption, the fingers come off and the nose rots away. To remove this *thahu* both the elders, *athuri ya Kiama*, and the *mundu mugo* are called in, the latter procures a bone of an elephant and the bone is placed on the ground and the *athuri* form a circle round it, the patient then steps over the bone; the *mundu mugo* afterwards purifies the man in the usual way.¹

¹ The act of stepping over a corpse is probably considered a serious insult to the *ngoma*. This applies to those circumcised *à la* Kikuyu and *à la* Masai.

This *thahu* applies to both sections of the tribe, viz., those circumcised Kikuyu fashion and those circumcised Masai fashion.

(5) During a marriage ceremony five goats have to be presented to the *athuri ya Kiama* and they are killed for a feast. After they are slaughtered the eyes of the carcasses have to be taken out, if during this process an eye becomes cut or broken, the bride becomes *thahu*, and if nothing is done will not bear children; the father of the girl has to present a sheep to the *athuri*, and the girl is purified by them—this is not a matter which necessitates a medicine man. This applies to both sections of the tribe.

(6) On the occasion of a birth, the young men of the village kill a sheep for a feast called *mambura*; if the man who slaughters it cuts his finger and his blood drips on to the meat, he is *thahu* until he is purified by the *athuri ya Kiama*.

This applies to both sections of the tribe.

(7) If a man, the head of the village, attends the circumcision of a child at the hut of one of his wives, he is *thahu* until the children who were circumcised in the hut are cured; a *mundu mugo* then comes and purifies him and the woman in whose hut the children were circumcised.

This only applies to those circumcised Kikuyu fashion, for it is the custom of that section for the village head to sleep in the hut where the circumcision has taken place, and he becomes *thahu*, whereas it is the custom for a village head who was circumcised Masai fashion to sleep in another hut until the ceremonies are quite over and he thus escapes the *thahu*.

(8) If one man kills another, and comes to sleep at a village and eats with the family in a certain hut, the people with whom he has eaten become *thahu*, and the skin on which he has slept is *thahu* and may infect anyone sleeping on it. This is a case for a *mundu mugo* who is called in to purify the hut and its occupants.

If, however, the owner of the hut and his family have been circumcised Masai fashion they do not become *thahu*.

(9) If an important elder dies he is buried by his sons and they are *thahu* until purified by the *athuri ya Kiama*, they are smeared with oil and their heads are shaved during the ceremony; this is not considered a very serious *thahu*. If they have been circumcised Masai fashion they can be purified forthwith, but if they belong to the other section it is necessary for them to isolate themselves until the new moon appears.

(10) When a child is born the father kills a sheep, of which a large part is given to the woman who has assisted at the confinement, and if before he has pegged out the skin and divided the meat he is summoned away from the village on urgent business (my informant gave an example, and said: "Suppose he was arrested and taken away as a prisoner"), the infant is *thahu* and the principal elder of the village has to kill a sheep, take a strip of skin from the fore foot of this animal, and fasten it as a bracelet on the wrist of the infant to remove the ill luck.

This applies to both sections of the tribe.

(11) If children are being circumcised at a village, and the owner of the hut where the ceremony has taken place goes away to sleep at another village before he is cleansed, and, say, on the way, he meets a crowd of people, the children who were circumcised will all be *thahu*. This is a case for a *mundu mugo*.

This only applies to those circumcised Masai fashion as, by Kikuyu fashion, the man does not sleep at another village.

(12) If two men who were circumcised at the same ceremony fight and blood is spilt, they are both *thahu* until a *mundu mugo* comes and removes it. He kills the usual sheep and the *athuri* or elders put a strip of the skin of the sheep on the wrist of each of the two men. Persons who are circumcised at the same feast are called *wakini*. This applies to both sections of the tribe.

(13) If one man circumcises his children according to Masai fashion and another according to Kikuyu fashion, and the former should eat meat killed by the latter, the former will be *thahu* and *vice versa*.

(14) If a person belonging to the Mwithaga clan sleeps in the hut of a person belonging to another *rika* or clan, the people of that hut become *thahu*; this is a case for both medicine men and elders, and it applies to both sections of the tribe.

(15) If a man throws some earth at his wife, both become *thahu*; this is a case for a medicine man, and both have to be purified. This only applies to those circumcised Kikuyu fashion.

(16) If food is eaten from a cracked pot the persons eating it become *thahu* and a *mundu mugo* has to be called in. This affects both sections of the tribe.

(18) The wives of smiths are usually decorated with armlets made of twisted strips of iron called *mithiori*. If a man enters the hut of a smith, and cohabits with a woman so decorated, he becomes *thahu*. A sheep has to be killed and a supply of honey beer provided, a strip of skin from the sheep is placed on the wrist of the man, the woman, and any children she may have; this bracelet is placed on the left wrist of females, and the right wrist of a male. The purification ceremony is performed by another smith.

This *thahu* affects both sections of the tribe.

(19) Persons eating food in a smithy become *thahu*; the smith himself can purify one from this curse.

It affects both sections.

(20) If a bead worn on a warrior's neck or waist falls into food, the persons who partake of the food become *thahu*; if such a bead falls into the grain store and becomes inadvertently cooked with the food the result is the same; this only affects persons circumcised Kikuyu fashion.

(21) If a Mu-Kikuyu has had his crops protected by magical processes performed by a medicine man (to protect in this way is called *ku-roga*), and some one takes food from a garden so protected, he becomes *thahu*, and this form of *thahu* can only be removed by the medicine man who has *roga*-ed the plantation.

This applies to both sections of the tribe.

(22) If a man has connection with a woman from behind, they are both *thahu*. This is a very serious *thahu* and both the *athuri ya kياما* and a *mundu mugo* are necessary to remove it, neither the man nor the woman can eat any of the sacrificial sheep.

This applies to both sections.

(23) If a man beats his wife and draws blood the woman is *thahu*, and the man cannot sleep in her hut until she is freed from it; the elders are called in and kill a sheep. The two persons concerned are not allowed to eat any of the meat, and the skin is reserved as a fee for a *mundu mugo* who is called in to perform the formal lustration.

This affects both sections of the tribe.

(24) If a woman is carrying a baby on her back, and it slips out of the leather garment and falls to the ground it is *thahu*; the child must not be lifted from the place where it fell until a sheep has been killed on that spot, this is a case for both the elders of *kياما* and a medicine man. Both sections of the tribe are affected by this.

(25) If an elder or a woman when coming out of the hut slips and falls down on the ground he or she is *thahu*, and lies there until a few elders of *kياما* come and slaughter a sheep near by, and some blood and *tatha* (contents of the stomach of the sheep) are rubbed on the spot where the person fell. The elders then say "So and so is dead, let us bury him," and they plant a sprig of the bushes called *mukuria* and *muthakwa* on the site of the mishap. This applies to both sections.

(26) If a man marries a woman and she steals anything from a member of her father's clan, she is *thahu*, and milk will flow from her breasts without any natural cause, and any child she bears before the *thahu* is removed will be *thahu*. This is a matter for the *athuri* or elders of *kياما*; a sheep is placed on the woman's shoulders, and its throat is pinched until it micturates on the woman's body, the sheep is then killed, and the contents of the gall bladder, mixed with urine from its bladder, are poured over the leather garment of the woman, and her navel is touched with a little of the mixture. The milk that was unnaturally flowing from her breasts will then dry up, and by this sign they will know that the *thahu* is removed.

This applies to both sections of the tribe.

(27) If a man's son commits adultery with one of his father's wives, and the father is still alive, the father becomes *thahu* and not the culprit, the reason given being that the father takes the *thahu* because he begot the son. The erring woman does not return to her husband, she is not *thahu*, and can still bring food to her husband, but he does not cohabit with her, and her hut is broken down. The son who has transgressed in this way has to make peace with his father by a formal present of a big male goat, *nthengi*. This *thahu* can be removed by the *athuri ya kياما*; it is a very serious matter, and if the *thahu* is not quickly removed from the father, he will die.

It applies equally to both sections of the tribe.

(28) If a person touches menstrual blood, he or she is *thahu*; or if a man

cohabits with a woman in this condition he is *thahu*. The person who is contaminated will first take some cow dung and then red ochreous earth (*thiriga*) and plaster it on the part of the body touched by the blood; ochre is said to be used because it is the same colour as the blood; the woman from whom the contamination came is also *thahu*. The *mundu mugo* has to be called in to purify the persons.

This applies to both sections.

(29) If one woman is circumcised Masai fashion and another Kikuyu fashion, and the child of the latter is suckled by the other woman, the child becomes *thahu*: this is a case for a *mundu mugo*.

This applies to those circumcised Kikuyu fashion.

(30) If a hyæna comes into a hut at night, kills a goat and the owner kills the hyæna in the hut, the hut will be abandoned, and the whole village has to be purified by the *kiama*.

This applies to both sections of the tribe.

(31) If a hyæna defæcates inside a village, the village and its inhabitants are *thahu*, this is a case for the *kiama* to arrange; the usual sheep is killed and it must be eaten by the people of the village. If a person belonging to another village eats any of the meat, a hyæna will come and defile the village where he lives.

This applies to both sections.

(32) If a woman is carrying a gourd on her back and it falls and breaks, she is *thahu*; this is a matter for the elders of *kiama* to arrange.

(33) If a goat should come up to where people are sitting, and try to suckle a woman's breast, the woman is *thahu*, the goat has to be taken away and slaughtered at the village of the woman's father, and the elders of *kiama* are called in to purify the woman.

This applies to both sections.

(34) If a woman is milking a cow and the calf climbs up on her shoulders while she is so occupied, the calf is not allowed to suckle the cow again and is forthwith slaughtered; this is a case for the elders. The people of the village must not eat any of the meat, half is taken by the woman to her father and the other half is eaten by the elders.

This applies to both sections.

(35) When a woman has recently been confined and the discharges are still unfinished, it has sometimes happened that a cow has come along and licked the stool upon which she has been sitting. In such a case she must immediately tell her husband, if not, he will become *thahu* and die, and all the other people in the village will become *thahu* in a lesser degree and get ill. The cow has to be killed without delay by the elders and is eaten by them; no person of the village must eat of the meat unless he has been circumcised Masai fashion. Three elders in Kikuyu are said to have died from this *thahu* within recent years.

This only applies to those who have been circumcised Kikuyu fashion.

(36) If a cow is out grazing and its tail becomes twisted round a tree it is

thahu, and must be slaughtered there and then ; it is killed by the owner, and the elders receive the saddle and the young warriors the neck.

This only applies to cattle owned by persons circumcised Kikuyu fashion.

(37) There is a white bird called *nyangi* (the bird *nyangi* is in Swahili called *furakombe*) ; if one is seen to settle on a cow, and the cow is not killed, the owner of the cow will be *thahu* and die. The cow must be killed there and then and the meat divided up, the elders receive the saddle, and the neighbouring warriors the neck, no person belonging to the village must eat of the meat. The herd of cattle also need to be purified, and the owner of the village, assisted by the elders, must take a female sheep which has not borne a lamb, and a male goat ; these are slaughtered, and the intestines and bones of the animals (termed *ichua*) are placed on a fire, which is lit to the windward of the cattle kraal, and the smoke passing through the kraal and among the cattle will purify the herd. If the bird was killed among the cattle all the herd would die.

This applies to both sections.

(38) If a cow's horn comes off in a person's hand the animal is *thahu* and is slaughtered, the meat is eaten by all. This applies to both sections.

(39) If a bull or bullock leaves the herd when out grazing and comes home alone, and stands outside the village digging at the refuse heap (*kiaraini*) with its horns, it is known to be *thahu*, and is forthwith killed by the owner. This applies to both sections.

(40) If a goat is giving birth to a kid, and the head appears first and the body is not born quickly, it is said to be *thahu*, and is slaughtered by the owner. No woman must touch the meat of such an animal or she would become *thahu*, only men can eat the meat. Moreover, if a goat which is in kid should die, no woman must touch it or eat the meat, the idea probably being that her fertility might become contaminated. This applies to both sections.

(41) If a woman bears twins the first time she has children, the twins are *thahu*, and an old woman of the village, generally the midwife, stuffs grass in their mouths until they are suffocated and throws them out into the bush. If, however, a woman first bears a single child and then has twins they are not thrown out.

If a cow or a goat bears twins the first time, the same practice is observed, and a necklace of cowries is placed round the neck of the mother. This practice is observed by both sections.

(42) If the side pole of a bedstead breaks, the person lying on it is *thahu*, and a sheep must be sacrificed ; this is a matter for the *kiama* to arrange, and a bracelet called *rukwaru*, cut from the skin of the sheep, must be placed on the wrist of the person, or he or she is liable to die. This applies to both sections.

(43) A malicious person will, sometimes, out of spite or in a fit of rage, take up a cooking pot, dash it down to the ground and break it, saying the words *urokwowe*, "Die like this." This is a very serious matter and renders all the people of the village *thahu* ; it is necessary for the people of the village to pay as much as seven sheep to remove the *thahu*. This is naturally considered a crime according to

native law, and the offender is punished by the elders of *kiama*, who inflict a fine of seven goats. This applies to both sections.

(44) If a son seriously disobeys his father, he can be rendered *thahu* by his father rubbing ashes on his buttocks, and cursing him saying, "May you be eaten by my anus"; the son will have to take a sheep and then a male goat and a jar of honey and crave his father's forgiveness; the father slaughters the animal, and rubs his navel and his buttocks with the meat and the curse is removed. This applies to both sections.

(45) If the head of a village has a quarrel with another man, wounds him with a *simé* or sword, and blood is spilt in the village, the village becomes *thahu*, unless the offender takes his adversary and leads him round the outskirts of the village letting the blood drip on the ground as they go; the elders will then have to be called in, a sheep is killed, and they purify the village. This applies to both sections.

(46) If an idiot or maliciously-minded person picks up a skull, walks round a village with it and leaves it on the "*thomi*" or "place of conference," the village is *thahu*, and is in very serious danger. The elders are first called in and they take a sheep and drag it round the confines of the village by the same route as that taken by the person with the skull, the animal is killed and pieces of the intestines are dragged round the village; the meat of the sheep is only eaten by very old men. Six other sheep then have to be killed by the elders, and finally the medicine man has to come and purify each person in the village.

(47) If a wild animal is killed among a flock or herd of animals out grazing the beasts are *thahu*; they can be purified by the owner and the *kiama*; a sheep is killed and the bones and intestines are placed on a fire lit to windward of the infected flock or herd and the smoke cleanses them and removes the curse. *Vide* Tylor's *Primitive Culture*, vol. ii, pp. 430-434, "Fire serves for purification in cases too trifling to require sacrifice." This applies to both sections.

(48) If domestic animals are attacked and stung by bees they are *thahu*; a sheep is killed and the bones and intestines are placed on a fire lit to windward of the herd and the smoke removes the curse. This applies to both sections.

(49) If a son curses his father seriously he becomes *thahu*; he has to bring a sheep, which is eaten by his father and mother, the fat is melted and all three are smeared with it; the son then has to peg out the skin of the sheep in front of his mother's hut. This applies to both sections.

(50) If a person strikes anyone who is herding cattle, etc., and draws blood the flock or herd is *thahu*; the offender must pay a sheep, which is killed by the elders, and a strip of skin (*rukwaru*) is placed on the wrist of the offender; no young person is allowed near during the ceremony. This applies to both sections.

(51) If the droppings of a kite or crow fall on a person he is *thahu*; he must shave his head and bathe at a river, and the elders kill a sheep and fasten a strip of the skin on his wrist. The skin of the sheep must not be pegged out to dry in the village where the person lives. This applies to both sections.

(52) If a woman sleeps with her leather garment inside out it is unlucky, but she is not *thahu*, the procedure is for her to spit on the garment and turn it right way. This applies to both sections, but it is much more unlucky for a woman circumcised Masai fashion.

(53) When a man dies the eldest son gives one bull or a big male goat (according to his means) to the *athuri ya kياما* for a feast, the elders then teach him his duties (*kirira*). The next step is to give the elders a male sheep (*ku-hukuria*), which must not be eaten by the children; this is to cleanse the village of the deceased. Now if a son has not made these gifts and gone through the necessary ceremonies marking his succession, he cannot participate in the sacrificial feast which has to take place at the sacred fig tree after the death of an elder (called *ku-hoya Ngai*); the principal wife of the deceased can attend the sacrifice but the other wives and their children cannot, and if they do they will become *thahu* and it is a case for a medicine man to arrange. The women and children from the neighbouring villages can go.

If a sacrifice is made at a sacred fig tree to invoke rain only, *athuri ya kياما* can attend and eat it. No woman must go near. These rules apply to both sections.

(54) If children are being circumcised at a village according to Kikuyu fashion and the head of the village leaves the village on a journey before eight days have elapsed or, according to Masai fashion, before four days have passed, he and those of his children who have been operated on become *thahu*; this is a case for the medicine man to arrange.

(55) If a child has been circumcised and, on the first occasion after the ceremony on which he leaves his village, the goats and sheep come back from grazing and enter the village before he returns, he is *thahu*. He cannot return to his village until it is removed and must sleep at a neighbouring village where some of the other boys reside who went through the ceremony with him. To remove the *thahu* his father has to kill a sheep and place a strip of skin (*rukwaru*) from the animal on his wrist.

(56) If a father picks up one of his children and places it on his back or shoulders, the father becomes *thahu* and the child will die, the result is the same whichever the sex of the child; if he carries the child in front of him there is no evil result. This is a case for a medicine man to arrange, and it applies to both sections of the tribe.

(57) If a person should be bitten by a hyæna or a dog he or she is *thahu* and a medicine man has to be called in; he kills a sheep and places a bracelet or *rukwaru* of the skin on the wrist of the patient. This applies to both sections.

(58) If a dog dies in a village it is a very serious matter, the head of the village and his people are *thahu*, and the elders are called in. The village head provides a sheep which is slaughtered, and the stomach contents (*tatha*) are sprinkled round the village, which is then ceremonially swept by the elders; the medicine man is then called in to purify all the people of what is called the *mugiro* of the dog. (Note. The *mugiro* means the pollution produced by the blood of the

dog having fallen on the ground of the village or the death of the dog in the village.) This only applies to the Kikuyu section of the tribe.

(59) The children and grandchildren of brothers and sisters cannot intermarry. If they do it is a very grave sin, and all children born of such marriages surely die ; the *thahu* on them cannot be purged by any ceremonial. The parents are not affected. It sometimes happens, however, that a young man unwittingly marries a cousin ; for instance, if a part of the family moves away to another locality a man might become acquainted with a girl and marry her before he discovered the relationship. In such a case the *thahu* is removable, the elders take a sheep and place it on the woman's shoulders, and it is then killed, the intestines are taken out and the elders solemnly sever them with a sharp splinter of wood from the *mukeo* bush, and they announce that they are cutting the clan "*kutinyarurira*," by which they mean that they are severing the bond of blood relationship which exists between the pair. A medicine man then comes and purifies the couple. This only applies to the Kikuyu section of the tribe.

(60) If a parent goes on a journey and while absent one of his or her sons cohabits with his wife the parents are *thahu*, and upon re-entering will be seized with illness. This is a case for the medicine man, who has to be called in to perform a lustration ceremony to purify them ; the offending son is not affected. Sprigs of the *mahoroa*, *muchatha* and *mitei* bushes are bound up together and dipped in water, and the water is sprinkled over the couple, a little is also sprinkled at the gate of the village. This only applies to those circumcised Kikuyu fashion. It is curious to note that practically the same custom is observed by the A-Kamba.

(61) If a Kikuyu native kills a man belonging to another tribe he is not *thahu* ; if he kills a man of his own tribe but of a different *rika* or clan to his own, he is not *thahu* ; if however he kills a man belonging to his own *rika* or clan he is *thahu*, and it is a very serious matter. The matter can be arranged by the elders in the following manner :—

Two trunks of the plantain or banana tree (called *miramba* in Kikuyu) are placed on the ground parallel to each other and an elder sits on each ; one of them is then lifted up by another elder, and the offender has to seat himself on the tree trunk exactly in the same place ; the other elder is then removed and the elder brother of the deceased or brother next in age to him is put in his place.

The mothers of the offender and deceased then bring to the place food made of every kind of field produce grown by the tribe, also some meat ; the usual sheep is then killed by the elders and a little of the *tatha*, or stomach contents, is then sprinkled over the food which was provided by the mothers of the two parties.

The two elders who first sat on the plantain trunks then solemnly eat a little of this food, and also administer a little to the offender and the brother of the deceased. Two gourds containing gruel made of meal are then taken, and the elders put a little of the *tatha* in each, and one gourd is sent to the village of the offender and one to that of the deceased. The remaining food is then divided among the assembly.

The following day the elders proceed to the local sacred fig tree (*mugumo*), and kill a sheep there. They deposit some of the fat, the chest bone, the intestines and the more important bones at the foot of the tree, the rest of the carcass is eaten by the elders. They say that the *ngoma*, or spirit of the deceased, will visit the tree that night in the shape of a wild cat and eat the meat, and that this offering will prevent the *ngoma* of the deceased from coming back to his village and troubling the occupants.

A medicine man then has to come and purify the murderer and the brother of the deceased.

The above ceremony is not considered legal, and cannot be performed, till the blood money has been paid.

The above case is a good example of the two stages of the removal of a more serious *thahu*, in the first place the spirits of the deceased ancestors including that of the murdered man have to be appeased, and then the personal defilement due to the spilling of blood, which falls on both the murderer and the family of the murdered man, has to be removed by a separate ceremony performed by the medicine man, and it is interesting to note that only the medicine man can remove this latter.

The above *thahu* applies to both sections of the tribe. In describing the above details, my informants explained that according to Kikuyu native law the blood money for a man was 100 sheep and goats and nine sheep and goats in addition for the elders. If, however, a man could not raise 100 goats it was the custom for him to give three daughters in payment plus the nine goats for the elders.

The Kikuyu were formerly only allowed to eat the following wild animals and birds before being circumcised:—partridges (*ngware*), pigeon (*ndutwa*), and hyrax (*mi-kami*). Many will not eat wild game throughout their lives, people follow the custom they have been brought up to observe; those that eat wild game probably had Asi or Dorobo ancestors. A person who eats wild game does not become *thahu*. This same view is held by both sections. The repugnance to eating wild game probably had its origin in totemism, but all traces of this belief seem to be lost in S. Kikuyu.

(62) The last of the *thahu* which will be quoted is one of some importance, as it may be in primitive culture the germ of one of the beliefs which affect the life of civilized peoples. This is the ill luck which is attached to the seventh day.

A herdsman will not herd his flocks for more than six days, and on the seventh must be relieved by another man.

If a man has been on a journey and absent for six days he must not return home on the seventh day, and must observe continence on the seventh day; sooner than return to his village on that day he will go and sleep at the house of a neighbour a short distance away. If this law is broken, serious illness is certain to supervene and a medicine man (*mundu mugo*) has to be called in to remove the curse. Both sections of the tribe are subject to it, and both male and female are affected and moreover the live stock of the offender will become sick.

This belief makes it easy for the missionaries to explain to the A-Kikuyu the force of the Christian observance of the Sabbath.

It will be well to review the results of this inquiry, and it should be noted that in a number of cases, about one-third of those enumerated, the *thahu* is brought upon the offender or brought upon a third party, by the intentional act of the offender; in other cases the person and sometimes live stock are the victims of circumstances over which there is no control.

The investigations throw a vivid light upon the complicated nature of the life history of a Mu-Kikuyu, and it is pretty evident that a native of this tribe cannot go through life without becoming *thahu* sometime or other.

The *thahu* is, however, in nearly all cases removable by the elders and medicine men for payment, and it may therefore be urged that the belief has not much value as a moral restraint. This view cannot, however, be seriously maintained for the following reasons:—Take the case of a person who commits an act which he knows will bring *thahu*; it must be clearly understood that he never questions the liability of the principle, he goes about with the burden of the misdeed on his conscience, this worries him so much that he gradually gets thin and ill, and all this he puts down to the *thahu*. It therefore ends by his confessing to the elders and begging them to free him from the curse. It is in essence nothing more or less than the confession and absolution of the Christian Church. Then again we have to consider the publicity of *kraal* life, very little goes on which is not known to the neighbours; polygamy too increases this, a man confides in one wife, she tells another wife and so it goes through the village; if one person commits an act which inflicts *thahu* on himself or a neighbour, it will gradually leak out by some means or other, and public opinion will insist on measures being taken to remove it. No living person would ever dream that he could hope to evade the wrath of the *ngoma* or ancestral spirits. Of course occasions may arise when the commission of a prohibited act may involve a third party, and the person who committed it may preserve silence on the point, but the elders will in most cases be in possession of complete information as to the movements of every person in the neighbourhood, and moreover, the demeanour of the conscience-stricken culprit will invite suspicion, so in practice it is but rarely that the offender would not be detected.¹

It is curious to note how deeply this division of the Kikuyu tribe into the two guilds *Kikuyu* and *Masai* permeates their customs. There is for instance a ceremony called *Ku-chiaruo ringi*, the literal translation of which is "to be born

¹ *Vide* cases Nos. 1, 2, 3, 4, 12, 15, 18, 19, 21, 22, 23, 26, 28, 49, 50, 54, 59, 61. The *thahu* beliefs also occur among the Kamba tribe and there go by the name of *makwa* and also *thabu*; they have not however yet been fully worked out; the Hon. C. Dundas informs me that he saw a youth who had incurred the curse through sitting on his brother-in-law's bed and that it may also be contracted through sitting on a stool belonging to certain relatives. Several cases are mentioned on p. 102 of author's work on A-Kamba and other E. A. tribes. The term *thabu* is extraordinarily similar to *tabu* and in many ways there is very little difference between *tabus* and *thabus* or *thahus*.

again," and which must be undergone by young people before they are eligible for circumcision. The occurrence of these two ceremonies, connected as they are, cannot help but strike one as being in a lower civilization the genesis of the idea of the sacraments of baptism and confirmation, and in fact some of the missionaries it is said do not scruple to explain the two Christian doctrines mentioned by reference to the two pagan ones, and state that with the help of this key the natives at once grasp the idea of their doctrines.

But to return to the ceremony itself—the form varies with the guild of the parents. According to the Masai fashion, about eight days after the birth of the child, be it male or female, the father of the infant kills a male sheep and takes the meat to the house of the mother, who eats it assisted by her neighbours as long as they belong to the Masai guild. At the conclusion of the feast the mother is adorned with the skin from the left fore leg and shoulder of the sheep, the piece of skin being fastened from her left wrist to left shoulder; she wears this for four days, and it is then taken off and thrown on to her bed and stays there till it disappears. The mother and child have their heads shaved on the day this ceremony takes place; it has no connection with the naming of the child which is done on the day of its birth. The ceremony of *Ku-chiaruo ringi*, according to Kikuyu fashion, is as follows in S. Kikuyu. The day after the birth a male sheep is killed and some of the fat of the sheep is cooked in a pot and given to the mother and infant to drink. It was not specifically stated that this had a direct connection with the rite referred to, but the description commenced with a mention of this. When the child reaches the age of from three to six years the father kills a male sheep, and three days later the novice is adorned with part of the skin and the skin of the big stomach.

These skins are fastened on the right shoulder of a boy or on the left shoulder of a girl. The skin used for a boy has, however, the left shoulder and leg cut out of it, and that for a girl has the right shoulder and leg cut away.

The child wears these for three days, and on the fourth day the father cohabits with the mother of the child.

There is, however, one important point, and that is that before the child is decorated with the sheep skin it has to go and lie alongside its mother on her bed and cry out like a newly born infant. Only after this ceremony has been performed is the child eligible for circumcision.

A few days after circumcision the child returns to sleep on a bed in its mother's hut, but the father has to kill a sheep before he can return, and the child has to drink some of the blood, the father also has to cohabit with the mother upon the occasion.

Owing to similarity of name it is possible that the ceremony of *Ku-chiaruo ringi* might be confused with *Ku-chiaruo kungi*, which is of widely different significance. This latter is an adoption ceremony, and is said to be similar to a Swahili rite called *ndugu Kuchanjiana*. If a person has no brothers or parents he will probably try to obtain the protection of some wealthy man and his family. If

such a man agrees to adopt him he will take a male sheep and slaughter it, and the suppliant takes another one. The elders are assembled and slaughter these sheep, and strips of the skin (*rukwaru*) from the right foot and from the chest of each sheep are tied round each person's hand, each is decorated with strips of skin from the sheep of the other party. The poor man is then considered as the son of the wealthy one, and when the occasion arises the latter pays out live stock to buy a wife for his adopted son.

Circumcision Ceremonial.

As previously mentioned, the A-Kikuyu are circumcised according to two systems, some according to one and some according to the other.

(1) *Ku-ruithia ukabi*, i.e., Masai fashion.

(2) *Ku-ruithia u Kikuyu* or *Gikuyu*, i.e., Kikuyu fashion.

The actual surgical operation is the same, but according to the Masai system the boys stay in the hut, where they sleep after the operation takes place, for four days, and then go out, shoot birds, and wear the skins of the birds on the head and neck. When the new moon appears their heads are shaved, and each one then goes to his home. The head of the village cannot sleep in the hut where the circumcised youths stay until they are well.

According to the Kikuyu system the youths stay in the hut for eight days; on the day of the operation a sheep is killed, and on the ninth day the father of the children takes them away to their homes. The head of the village sleeps in the hut where the youths stay after the operation has taken place.

Those circumcised according to Kikuyu fashion hold the feast called *Mambura* the day before the operation; the writer recently witnessed one of these gatherings, and so is able to describe it with some accuracy. It was held at a village between the Mathari and Thigiri streams, and was on the 12th day of the moon, so there does not appear to be any particular significance as to date. Several thousand people of both sexes had collected to dance and take part in the festivities; the warriors were dressed in their war paint and had their bodies smeared with red or grey paint, and in some cases were picked out with star-like patterns. The women were all in their best, and freely smeared with red ochre and oil, a large collection of elders were there, and the chief was present, as he explained, in order to keep order and prevent the young warriors from quarrelling. Over the gate of the village two long pieces of sugar-cane were fastened, and all who entered the village were supposed to pass underneath, the entrance of the village was also guarded by a bag of medicines belonging to a *mundu mugo*; these were supposed to prevent anyone coming into the village to bewitch the candidates. In the morning a big male goat, *nthengi*, was slaughtered by the elders of Kiama by strangulation, and each male candidate for circumcision had a strip of the skin fastened round his right wrist, and the same strip was also carried over the back of his hand and his second finger was passed through a slit in it. The male candidates were nude with the exception of a string of beads or so, and a necklace

made of a creeper called *ngurwa*; the girls were nude as far as clothes went, but were enveloped in strings of beads from their necks to below their waists. Much dancing took place till a little after 2 p.m., when a ceremonial meal took place. The candidates came into the village in Indian file, the girls leading the way. They were received in front of the hut, where they were to reside temporarily after the operation, by a few elders who had for some time been preparing a number of strips of a vegetable creeper, and smearing them with a black oily mixture. Each girl first came up and had a piece of the creeper fastened round her left ankle; the creeper is called *ruruera*, and each piece was smeared with medicine made from the *umu* and *wangnundu* plants mixed with castor oil. One of the elders then took a handful of porridge made of *wimbi* and *mtama* meal (eleusine grain and sorghum), and placed some on a bundle of twigs of the *mararia* bush and offered it to each candidate, the candidate bit a little piece and then spat it out on the ground, the balance was then placed in her hand and she ate it. The porridge was placed on a flat stone used for grinding corn. The boys then came along one by one and the ceremony was repeated in the same manner, but the strip of creeper was fastened on the right ankle of each boy. It was stated that the object of this portion of the ceremony was to lessen the pain suffered by the candidates during the actual operation.

In another part of the village a man was completing five stools of white wood, these were roughly hewn out of the solid, and were special seats for the elders and old women who had to perform the ceremony.

Immediately after the ceremonial meal was finished a great rush occurred, and the candidates, followed by the crowd, galloped off to a *mugumo*, fig tree, about 300 yards away; as they approached the boys threw clubs and sticks up into the tree, and then commenced to climb into the branches hacking savagely the whole time at the leaves and twigs; each youth had a light club with the head sharpened to a blunt cutting edge, and by dint of vigorous hacking gradually broke off small branches which fell down among the crowd below, and were immediately seized by the people, some of whom at once began to strip off the bark.

It was said that the bark was to bind round the heads of the candidates. The people then danced round the tree, and this ended the proceedings. The leaves of the fig tree are collected and strewn in the hut where the candidates sleep after the operation, and are said to be for the purpose of catching the blood, and possibly to prevent the hut being defiled by the blood soaking into the earthen floor. They would never throw sticks into, or gather leaves from, a sacred *mugumo* tree.

The actual operation was not seen, as it took place at dawn the following morning; it takes place in the open near the village. The bulk of the prepuce is not cut off at all, but forms an excrescence below the glans, a small piece of skin only is cut off; it is not buried but thrown away.

Mambura festivities preceding circumcision according to Masai fashion.

The festival which precedes circumcision according to the Masai fashion was also witnessed; it was originally to have been held at full moon, but bad weather caused its postponement till the 25th day of the moon, which seemed to be equally propitious.

In the morning a sheep was killed and eaten by the elders, and about noon the candidates had assembled. The people of the village and the candidates passed their time in dancing until the preparations were completed. The male candidates were smeared from head to foot with ashes, and were nude with the exception of a belt of iron chain (*munyoro*), a bead necklet (*kinyata*), an iron dancing bell (*kigamba*) on the right leg near the knee; some wore a ring of the *ngurwa* vine round their necks.

The girls were decorated from neck to waist with a load of beads as in the ceremony according to Kikuyu fashion.

The first proceeding was the decoration of each of the male candidates with a bracelet made of climbing euphorbiaceous plant called *mwimba iguru*.

The elders of Kiama and the wives of the owner of the village, who was one of the elders, sat round in a circle in the middle of the village with a quantity of tendrils of the plant on a wicker tray, *kitaruru*, in the centre; a small gourd of white diatomaceous earth, *ira*, was produced, and each person licked a little and then smeared a small portion of the white earth on his throat and navel; this was to purify himself for the ceremony; a horn cup of honey beer was then produced and each one took a sip, and then all simultaneously blew it out of their mouths in spray on to the plant; the object of this was said to be to purify or dedicate the plant to the use to which it was to be applied. The male candidates then came up one by one and a bracelet of the creeper was fastened on the right wrist of each.

After a little more dancing the male candidates were seated in a row on ox-hides spread out on the ground, a woman, the sister of the owner of the village, came along and poured first a little milk and then a little honey beer on the head of the one on the left of the line, she then smeared it over the scalp and shaved a place on the right side of his head and then passed on to the next; the shaving was merely ceremonial, as the candidates had all been shaved on the head before coming to the ceremony—the native razor, *ruenji*, was used. The milk was in a gourd and the beer in a cow horn. The male candidates then got up, and the same performance was gone through with the girls.

Shortly after this two great branches from the *matamaiyu* tree were brought to the gate of the village and held upright, one on each side of the entrance; the elders said that in the ceremonies according to Masai fashion the *matamaiyu* had the same significance as the *mugumo* tree had in the Kikuyu ceremonial. The candidates came through the village dancing and singing all the time up to near the *matamaiyu* branches, and stopped a few yards away from them, still dancing

and singing. The song did not appear to have any great significance, being to the effect that from time immemorial they always had the *matamaiyu* at these festivals, and now it had come they could proceed to circumcise the candidates according to old custom.

They then all returned to the village, and the candidates were arranged in the order in which they could be circumcised on the morrow. The owner of the village divested himself of his blanket and donned an oily kaross made of goatskin from which all the hair had been scraped; his hands were carefully wiped and some *ira* (the white earth previously mentioned) was poured into the palm of his hand from a small gourd. He then commenced at the left of the line and anointed each candidate on different parts of the body with smears of the white earth; he was assisted by his principal wife and two sisters and another elder.

The boys were first touched on the tongue, and a line was then drawn down the forehead to the point of the nose, a spot was placed on the throat, the navel, the palm of each hand, and finally between the big toe and first toe.

The procedure with the girls was slightly different, first the tongue was smeared, then a horizontal line was drawn across the forehead, then the palms of the hands, the navel, and finally a band was drawn round each ankle.

After the candidates had thus been anointed, the elders took mouthfuls of honey beer out of a horn and blew it in spray over each candidate's head and shoulders. This part of the proceedings was a ceremony intended to purify the candidates from any *thahu* which might be on them, and to protect them from any *thahu*, which was possessed by an onlooker, being transferred to a candidate. The spectators "*ululued*" loudly during this operation.

It was then about 2 p.m., and nothing further of importance took place, the crowd, which had been gradually growing, however, danced on till sundown.

At nightfall I was told that each candidate received a dose of the crushed seeds of a plant called *ngaita* which acted as an aperient, and in the morning before the operation each one had to bathe in water in which an axe head had been placed to make it cold; it was however stated that if there were a large number some would not bother about this, but would bathe in the nearest stream.

The operation took place at dawn on the following morning, and was not witnessed. No firewood but that from the *matamaiyu* tree is allowed to be used in the hut where the candidates stay after the operation.

This custom of circumcision according to the two different systems applies to both sexes. Both classes dance with the oval wooden shields called *ndomi* before circumcision, and travel through the district painted with white clay in zig-zag stripes.

A man circumcised according to Masai fashion can marry a girl circumcised according to Kikuyu fashion and *vice versa*; but a medicine man and the elders have to perform a ceremony to change the girl from Kikuyu to Masai before the marriage can take place. The ceremony is said to be as follows:—a male sheep is killed and the small intestines are extracted. The medicine man and the girl

take hold of them, and the elders then cut the intestines with three pieces of wood sharpened to a knife edge and made of *mathakwa*, *mukeo*, and *mukenya* bushes. A piece of intestine is cut with each knife. The girl is then anointed with the fat of the sheep by another woman and smeared over with *tatha* (the stomach contents) mixed with water.

In the case of a marriage between a couple belonging to different guilds the man never changes; it is always the woman who relinquishes the system in which she was brought up. A man can, however, at his own wish and for reasons of his own change his guild, that is to say, a man brought up Masai fashion can change over to the Kikuyu side. It is a much simpler matter for him than for a woman; a male sheep is killed by the elders, and a medicine man then comes and puts him through the ordinary purification ceremony.

A man usually belongs to the guild of his father, that is to say, he is circumcised according to the system of his father and grandfather before him. The mark of a person circumcised Masai fashion is as follows:—a copper ring is placed in the lower lobe of each ear, and a piece of stick with an ostrich feather on it is bound on each side of the head; a band of sansevieria fibre, *ndivai*, is bound round the forehead, and on this band bird skins are fastened.

They wear these ornaments for eight days only; they also carry bows and arrows and wear sandals. After eight days they put off the ornaments and give up the bows and arrows, leaving them in the village where they were circumcised. They then have their heads shaved at the village and return home.

Those circumcised Kikuyu fashion go through none of this, but wear for two days a strip of banana fibre, *maigoia*, in the lobe of each ear. They also wear in their ears for five days after recovery a round plug of *mununga* wood whitened on the top with *ira* and a necklace of the leaves of the *mutathi* plant. This is probably a protective magic to preserve them from evil influence during their convalescence.

The marks just enumerated only apply to the male sex. With regard to girls further inquiry has elicited the following facts:—A girl whose father belongs to the Masai guild wears rings of copper on each ankle; these are called *ndogonyi*. A girl whose father belongs to the Kikuyu guild wears an anklet of iron with little rattles attached to it; this is called *nyara runga*.

If a girl who is Masai marries a man who is Kikuyu the *ndogonyi* are taken off at marriage. If a girl who is Kikuyu marries a man who is Masai she does not, however, discard the *nyara runga*.

The elaborate ceremonial of old days in connection with circumcision is now rapidly dying out in Southern Kikuyu.

Inquiries were made as to whether the bull-roarer, which is well known in Kikuyu as *kiburuti*, was used in these ceremonies, but curiously enough it appears to only survive as a child's toy, whereas in many of the neighbouring tribes that and its first cousin, the friction drum, are regularly used in initiation ceremonial.

Extinction of fire in a hut.—Though unconnected with the *thahu* beliefs as far as can be discovered, the ill luck which is associated with the extinction of fire in a hut is rather interesting to note.

If a man has several huts and the fire goes out in all of them in a single night it is extremely unlucky. He must at once summon the elders, and they kill a male sheep and sprinkle some of the stomach contents or *tatha* on each fireplace. If his nearest neighbours live some little way off he relights the fire by means of a fire stick, *mwaki ku-thegetha*, but if they live near by he begs some fire from them. When the sheep is killed they also fry the fat in a cooking pot and sprinkle some of it in the village and pray to *Ngai* (God)—“We give thee fat to drink, and beg thee not to extinguish the fire again.”

If fire goes out in the hut of a medicine man it is not necessary for him to kill a sheep like ordinary people, but he feels the ill luck all the same, for he will not travel next day, and if anyone comes to him for medicine or to be purified he will not perform the ceremony until a whole day has elapsed.

The elders who were interrogated about this were quite clear that it was God who put out the fire and not the *Ngoma* or spirits.

Miscellanea.—A curious custom was recently noticed during a journey among the Kikuyu. The dessicated carcass of a cow or ox was noticed in the branches of a tree by the roadside a little distance from a village, and it appears that if cattle are lodged at the village of a friend and one should die, the owner is informed, and he is asked to come over and see it and remove the meat. If he does not come for some reason or other the carcass is hoisted into a tree so that all may see. The object of this is that people may know that the beast was not surreptitiously killed and eaten by the people of the village, and no claim can then be lodged against them by the owner.

Occasionally in a Kikuyu village the vertebra of an ox may be seen trans-fixed on the stick which surmounts a grain hut. This is a charm to keep butterflies away from the village, as it is believed that these insects carry sickness to the goats and sheep.

PURIFICATION BY MEDICINE MAN.

KU-TAHIKIA IN KIKUYU.

Reference has been repeatedly made in this paper to purification by the medicine man, which generally concludes the ceremonies connected with the removal of *thahu*. This ceremony is the same in all cases in which it is considered necessary; it may vary a little according to the practice of a particular medicine man, but that is all.

The writer was recently present at one of these ceremonies, and the procedure was as follows:—The medicine man first received a sheep; he then made a small incision between the hoofs of the right fore leg and rubbed a little medicine into the wound. This medicine was a powder made from the *mararia* bush and *mahunguru*, which is the epidermis and hair of a sheep. Probably the idea underlying this was a consecration of the animal for the purpose of the ceremony. The medicine man then brought a number of sprigs of the various plants—

Mahoroa,
Murumbai,
Uruti-Emilia?
Mukandu,
Muchatha-Emilia, *sp.*,
Matei or *Mitei*,
Ihurura, a creeping, vine-like plant.

He separated these into two bundles, and bound each at the base with the creeper *ihurura*, and they resembled two hand brushes of green leaves.

The mother of the patient or person who was to be purified then fetched about a pint of water from the stream, carrying it in a couple of banana leaves laid over each other. A small depression was scooped in the ground, and the water still in the banana leaves was deposited therein. The medicine man and the patient squatted opposite to each other. The former then put a variety of powders in the water. These were enumerated as follows:—

- (1) Powder made from the stomach contents of the tree *hyrax*.
- (2) *Ruthuku* made from the *muhokora* root.
- (3) *Umu*, a reddish powder made from the root of a thorny plant.
- (4) A powder made from the *irura* (papyrus) and the *mahoroa* plant.

He then produced the dried right black fore foot of a sheep, dipped it in the water, stirred up the contents, and placed the wetted foot in the mouth of the patient, who licked it vigorously and then expectorated the liquid on to the ground. This was repeated some twenty or thirty times, and the medicine man all the while recounted all kinds of dangers and evils in a chanting voice with a general refrain, "May you be delivered from all these." He then took one of the bundles of plants and dipped the lower end in the water. The patient licked it and expectorated as before described, the medicine man chanting the whole time.

The same procedure was then adopted with the second bundle of leaves.

The patient then stood up, the medicine man took one of the brushes, dipped it in the water, and sprinkled the patient's head and wiped the front of his body with the wetted bundle of leaves. The patient then turned round and the back of his body was similarly treated.

The patient then knelt down and washed his face with the water and then washed each foot and leg. This done, he wiped his face, feet, and legs, first with one bundle and then with the other. The patient then put his finger into the

water and pierced the banana leaf basin, and the water soaked away into the earth. The medicine man then gathered up the banana leaves and his bundle of leaves and deposited them on the village manure heap, *kiaraini*.

There was still a final stage of the proceeding, viz., the anointing with white clay, *ira*. The patient still stood in front of the medicine man, who took from a small gourd some of the white earth, and smeared it down the line of the nose, on the upper lip, under the chin, on the right and left big toe, and on the palms of both hands. He then took a little of the medicines called *irura* and *muhokora* and placed a little in the palm of each hand of the patient, who crossed his hands and, holding them in this position, alternately licked each palm. The medicine man then licked a little of the above medicine, and the ceremony was finished.

The purification ceremony cannot be performed without payment, or it is of no avail.

APPENDIX.

GENERATIONS OF THE A-KIKUYU.

In the December number of *Man*, 1908, the Hon. K. Dundas gives a list of the *Rika* or circumcision ages of the A-Kikuyu which probably goes back about 100 years or so, but this enumeration did not go sufficiently into detail, and certain important points were missed, so it has now been revised.

Four well-known elders, named Katonyo wa Munene, Karanja wa Hiti, Ithonga wa Kaithuma, and Mukuria wa Mucheru, were consulted, and the following lists are probably as reliable as any such lists, dependent as they must be on the memory of old men, can be. The first list was given me by the first two, the second list by the second two. There are slight variations, but these are almost unavoidable under the circumstances.

Morika, singular—*Rika*, plural, is the circumcision age or generation, and corresponds more or less to the *poror* among the Masai. The *Rika* called *Manjiri*, *Mamba*, *Manduti*, and *Chuma* were not recognized by either of the elders, who both commenced their count with *Chiira*, which is obviously the same as *Shiera* of Dundas' paper, possibly the further north one goes among the Kikuyu tribe the farther back will go their legends.

The following is the list beginning at the most remote point:—

VERSION I.

1. *Chiira*.
2. *Mathathi*.

3. *Endemi*,
 4. *Iregi*
 5. *Kiarie*
 6. *Kamao*
 7. *Kinuthia*
 8. *Karanja*
 9. *Njuguna*
 10. *Kinyanjui*
 11. *Kathuru*
 12. *Nḡnanga*
 13. *Njerogi*, means the orphans, Chief Katonyo is of this *morika*.
 14. *Wainaina*, means those who shivered during the circumcision ceremony.
 15. *Mungai*, means swelled faces.
 16. *Kitao*, refers to their eating colocasia roots after they were circumcised.
 17. *Ngua ya nina*, those who wore their mothers' clothes.
 18. *Mbugwa* or *Kuchu*
 19. *Mwiruri*, name of a song they sang at the ceremony that year.
 20. *Mwitungu*, means smallpox.
 21. *Kiambuthi*, called *Mwangi*, those of the dancing place.
 22. *Kirira* or *Ngugi*
 23. *Mangorio*, named after a sweet smelling tree used to decorate the youths after circumcision.
 24. *Rohangha*, named after a girl who had decorated her ears before marriage.
 25. *Wanyoiki*, because they came one by one to the place of circumcision.
 26. *Boro*, the big stomach of a sheep.
 27. *Imburu*, the poor people (there was a famine at the time).
 28. *Ngoraya*.
 29. *Kiniti*, from a song.
 30. *Ingigi*, season of the locusts (Katonyo's son, Thuku, belongs to this generation).
 31. *Mutongu*
 32. *Kenjeko*
 33. *Kamande*
 34. *Wanyaregi*
 35. *Kanyuto*
 36. *Thegengi*
- These three, it is said, are often grouped as *Iregi*.
- The fathers of the oldest men alive in the country belonged to these ages, and they are called *Maina*.
- Because the circumcision wounds did not heal.
- Because the circumcision ceremony.
- Called *Mwangi*. { Time of the smallpox, probably about 1895.
When circumcised they went to dig potatoes in the fields.
- Called *Mwiringhu*. This is a name given by the youths themselves to this age. They will probably be renamed { Time of the caterpillar plague.
The wanderers.
The man-eating leopards; there were several about in that year.
The year of the cutting of the iron wire.

37. <i>Kariangara</i> or <i>Matiba</i>	} later by the elders when the generation is complete.	} They ate gruel made of immature maize (Thuku's son belongs to this year).
38. <i>Njege</i>		
39. <i>Makio</i>		
		The porcupines.
		Named after a liquid magic medicine which was sold in Kikuyu during the year. Those circumcised in 1910 belong to this <i>morika</i> , it will finish early in 1911.

VERSION II.

- | | |
|---|--|
| 1. <i>Chiira.</i> | 24. <i>Marire.</i> |
| 2. <i>Mathathi.</i> | 25. <i>Wangigi.</i> |
| 3. <i>Endemi.</i> | 26. <i>Ngua ya nina.</i> |
| 4. <i>Iregi.</i> | 27. <i>Wakirutu.</i> |
| 5. <i>Mukuria.</i> | 28. <i>Mougwa</i> or <i>Kitindiko.</i> |
| 6. <i>Kicharu.</i> | 29. <i>Mwitongu.</i> |
| 7. <i>Kamao.</i> | 30. <i>Mwiruri.</i> |
| 8. <i>Kiarie.</i> | 31. <i>Uchu.</i> |
| 9. <i>Kimemia.</i> | 32. <i>Kiambuthi.</i> |
| 10. <i>Kimani.</i> | 33. <i>Ngugi</i> or <i>Kirira.</i> |
| 11. <i>Karanja.</i> | 34. <i>Mangorio.</i> |
| 12. <i>Kinuthia.</i> | 35. <i>Rohangha.</i> |
| 13. <i>Njuguna.</i> | 36. <i>Wanyoike.</i> |
| 14. <i>Kinyanjui</i> or <i>Kathuru.</i> | 37. <i>Kinyiti.</i> |
| 15. <i>Njnanga.</i> | 38. <i>Imboru.</i> |
| 16. <i>Njerogi.</i> | 39. <i>Ingigi.</i> |
| 17. <i>Ubu.</i> | 40. <i>Mutungu.</i> |
| 18. <i>Wainaina</i> | 41. <i>Kenjeko.</i> |
| 19. <i>Kagnethi</i> | 42. <i>Kamande.</i> |
| 20. <i>Kitao.</i> | |
| 21. <i>Mungai</i> | |
| 22. <i>Injehia</i> | |
| 23. <i>Mairanga</i> | |

These are often
grouped as *Wai-*
naina.

Often grouped as
Mungai.

This brings us up to the last few years, and the elders said they had no interest in them.

The name given to the *morika* generally has some topical allusion to an event which occurred during the year and about the time of the circumcision ceremonies; these allusions of course become forgotten in course of time, and the derivations in many cases now appear senseless.

One *morika* extends over two years or four Kikuyu seasons, called *Kimera*.

The terms *Maina* and *Mwangi* as names for the *rika* of the last fifty years seem to be fixed as far as one can gather, *e.g.* :—

The Chief Katonyo's father was *Maina*.

Katonyo himself is *Mwangi*.

Katonyo's children are *Maina*.

Katonyo's grandchildren when circumcised become *Mwangi*.

His great grandchildren when circumcised become *Maina*.

So apparently every person when circumcised takes the name of the *morika* of his grandfather.

The word *morika* is used indifferently as applying to the larger group as well as to the group of a particular year. Any young men, however, who have been circumcised of recent years, and are still under the class *Mwiringhu*, would not be called *Mwangi* until the group of years was complete.

The time of the completion of a group of years is decided by the elders, but what determined the commencement of a new group was not ascertained.

These *rika* names only apply to males.

[Figs. 1, 2, 3, 4, 10, and 12 are from photographs kindly lent by Mr. A. C. Hollis.]



FIG. 2.—FOOD FOR CEREMONIAL FEAST AND MEDICINE PLANTS
TO BE TIED ROUND LEGS OF CANDIDATES.



FIG. 4.—EATING CEREMONIAL FOOD
ACCORDING TO KIKUYU FASHION.



FIG. 1.—SUGAR CANES OVER GATE OF VILLAGE.

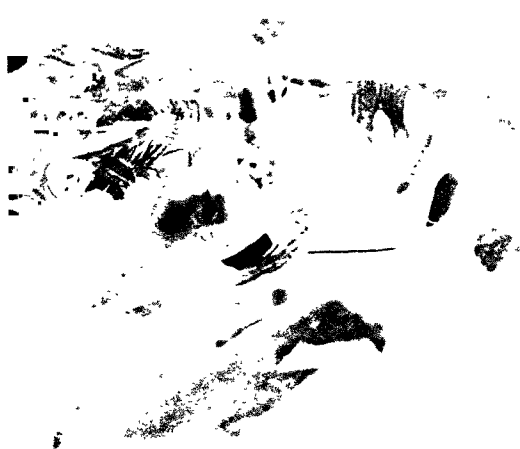


FIG. 3.—EATING CEREMONIAL FOOD.
SCENES AT "MAMBURA," KIKUYU CIRCUMCISION FEAST,
KIKUYU CUSTOMS AND BELIEFS



FIG. 1.—MALE CANDIDATES.

FIG. 2.—THE TWO OPERATORS.

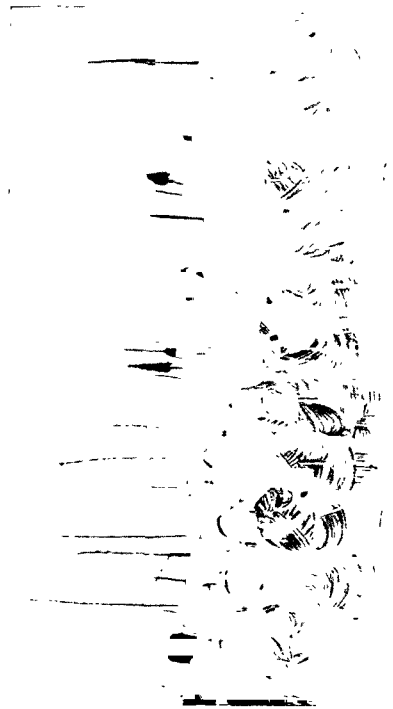


FIG. 3.—FEMALE CANDIDATES.

SCENES AT "MAMBURA,"

KIKUYU CUSTOMS AND BELIEFS.



FIG. 4.—WARRIORS PRESENT AT THE FEAST.



FIG. 1.—WARRIORS AT THE FEAST, SHOWING ORNAMENTATION.



FIG. 2.—MEN CLIMBING INTO THE "MUGUMO" FIG TREE TO GATHER LEAVES.



FIG. 3.—FIG TREE FULL OF PEOPLE.

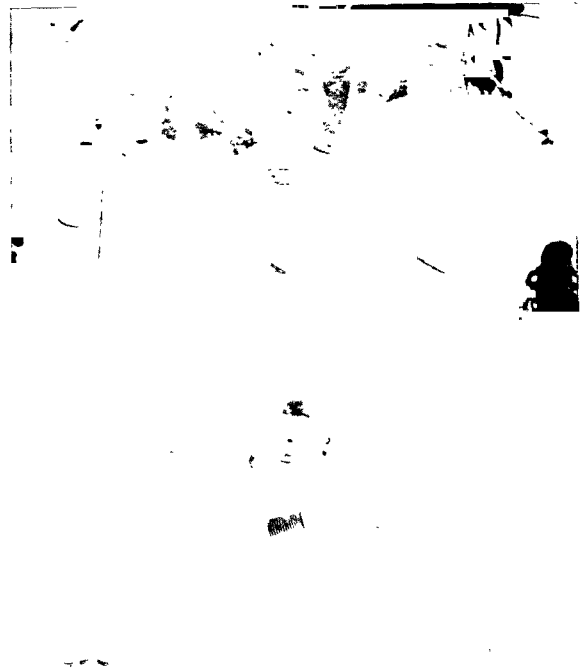


FIG. 4.—CHIEF KINARYIRI AND HIS HEADMEN AT THE FEAST.

SCENES AT "MAMBURA," KIKUYU CIRCUMCISION FEAST, ACCORDING TO KIKUYU FASHION.
KIKUYU CUSTOMS AND BELIEFS.

HIGH ALBANIA AND ITS CUSTOMS IN 1908.

BY M. EDITH DURHAM.

[WITH PLATE XXXI.]

HIGH ALBANIA is the large tract of mountain land which forms the north-west corner of Turkey in Europe. It is the only spot in Europe in which the tribal system has been preserved intact up to the present day and along with it a mass of very ancient customs. Changes are now sweeping rapidly over the Balkan peninsula, and it is with the hope of inducing someone better qualified than myself to go and investigate on the spot, before it is too late, that I will try and give an idea of the very primitive conditions which still prevail. Writing has, it appears, always been an art unknown to the tribesman, consequently he possesses an extraordinary memory, and has handed down quantities of oral traditions, most of which remain to be collected.

Life is very rough, but the dangers of travel in North Albania have been ridiculously exaggerated. In most places I was received with enthusiasm. Many districts did not remember having been visited by an Englishman, but had received a few Austrians or Germans; and a few had not admitted any foreigner at all for years. In such they only knew of the King of England vaguely, as one of the Seven Kings who are believed to squat in a circle and arrange the affairs of Europe. One of the seven is the King of France, and one, I believe, the King of Poland.

The Albanian tribesman does not call himself *Albanian*, but *Shcypetaar*, and his land *Shcypnii*. He says he is the son of an eagle (*Shcypé*), and his land is the land of eagles. His language grammatically belongs to the so-called Aryan group, and he boasts and believes that he is the oldest thing in the Balkan peninsula—it was his before the coming of the Slav or Turk, and he hates each with a bitter Balkan hatred. There is, I believe, no valid reason for doubting that he is the more or less direct descendent of the ancient Illyrian tribes that dwelt in the land when we first have record of it. Roman, Slav, and Turk have in turn held the Balkan peninsula. But the mountain tribesman has never been more than nominally conquered—and is still unsubdued. Empires pass over him and run off like water from a duck's back.

When I arrived in Scutari, Albania, the capital, travelling in the mountains was strictly forbidden by the Turkish Government, as the tribes were in almost

open revolt. But as I knew the people and had good introductions, I took French leave, sneaked out of the town in the grey before dawn, dodged the gendarmerie outposts, and was soon safely away in very light marching order.

I visited in all some twenty-four tribes, and in many was lucky enough to get a detailed account of the tribe's origin.

These tribes are divided into several marked groups. The first group I visited was *Maltsia e madhe*, the Great Mountainous Land. This consists of five large tribes and three small ones. Four of the five large ones each tells that its ancestor came from the north with his family, thirteen or fourteen generations ago, flying from the advancing Turks. In some cases they found uninhabited land and settled on it. In others, they fought with the men already on the land, and finally settled among them. These former inhabitants they call *Anas*, which is interpreted in the latest Albanian Dictionary as "aborigines." They tell that the *Anas* were very strong and active, could leap over six horses and ate acorns and horseflesh.

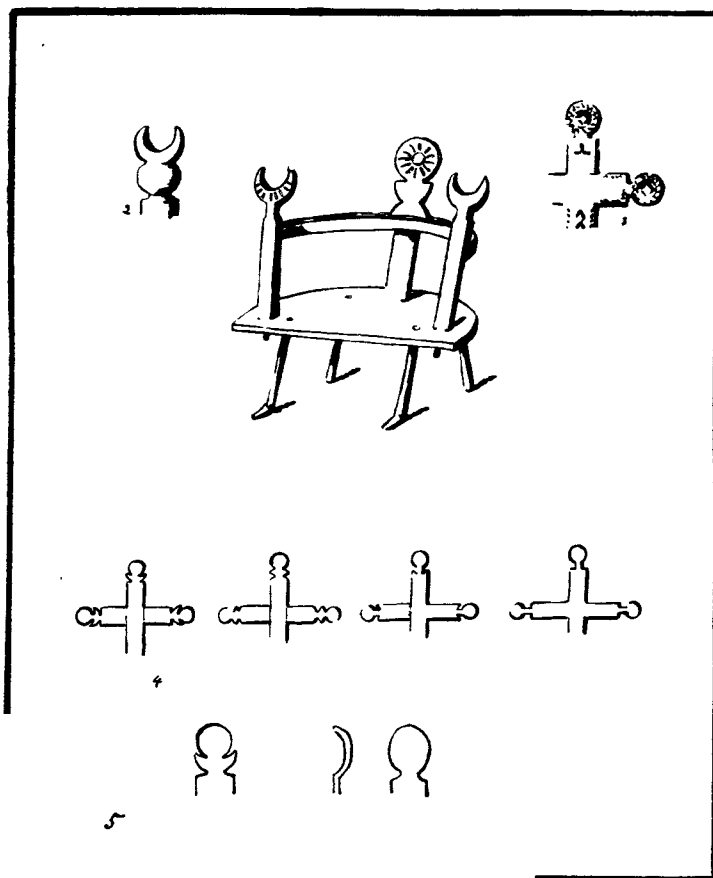
They intermarried with the *Anas*. A few houses in the Hoti tribe still trace direct descent from the *Anas*, in the male line. All four of these tribes (*Skreli*, *Hoti*, *Gruda*, *Kilmeni*) tell that their ancestors came from Bosnia or the Herzegovina, precise district unknown.

An approximate date for the coming of these immigrants is the founding of the church of *Gruda*, three hundred and eighty years ago, so they say. Some of the tribes say they came rather before, and some rather after, this event. This gives the date 1528. History shows that, roughly speaking, the tradition is probably correct, for the Turks killed the last King of Bosnia in 1463, spread gradually over the land, and finally incorporated all Bosnia and Herzegovina in the Turkish Empire about 1590. The shifting of the peoples falls well within this period (1463-1590).

The family, a communal of perhaps sixty or seventy members—such exist still to-day—would march slowly, rarely more than fifteen miles a day, and would be long on the way, the women carrying the burdens and driving the flocks. There would be an armed bodyguard of twenty or thirty fighting men, for at fifteen a tribesman is a fighting man, and often carries arms, and is no mean foe at twelve.

Many of the neighbouring tribes of Montenegro tell precisely the same tale—namely, that their ancestors fled from the Turks thirteen or fourteen generations ago. Moreover, certain tribes of *Maltsia e madhe* and Montenegro actually acknowledge blood-relationship, and trace descent from a common forefather. I am very strongly inclined to believe that the present language and nationality of such tribes—that is, whether to-day they are Serbophone and Montenegrin, or Albanophone and Albanian—has been determined mainly by whether they came under the influence of the Orthodox Servian Church or of the Roman Catholic Church. There is some evidence to show that the people who came down from the north were neither Orthodox nor Catholic, but belonged to the heretical

Bogomil sect, which was wide spread in the Balkan peninsula in the Middle Ages. I was extremely interested to find that the Malsia e madhe tribes, more especially the two, Skreli and Hoti, which say they come from Bosnia, the stronghold of Bogomilism, are freely tattooed on the hand, arm and sometimes breast, with designs that I at once recognised as common in certain parts of Bosnia, notably around Jaice, the old capital, where the last king was slain, and in these designs the sun and the crescent moon are almost always factors.



SUN AND MOON. N. ALBANIA.

Bogomilism was a form of Manicheeism, and in Manicheeism the sun and moon play a most important part. The Christian married women of Malsia e madhe wear a crescent of silver filagree or of gold braid on their caps. They vow and declare that this has nothing to do with the Turk: "It is our custom. We have always done it."

You cannot live long with the up-country tribesman without finding that the religion he professes is the merest surface veneer. He is guided for the most part by mysterious superstitions and beliefs hidden in the recesses of his soul, and he cares no jot for priest or *hodja* when their teaching runs counter to his own

Albanian ideas as to the fitness of things. He is a thorn in the side of all his spiritual pastors. He has often been execrated for the rapidity with which he will change his religion. Whole districts have been known to turn Moslem suddenly, in order to score off a priest who has offended them. Nor do they become good Moslems. I have lived with Moslem tribesmen all night and all day, but I have never seen one pray or perform the ceremonial ablutions; and his women are all unveiled. So long as he is allowed to go on being Albanian in his own way the tribesman will assume any faith that is convenient. Islam lets him have his own way, consequently Islam is spreading. In some transition districts (*e.g.*, Luria) people will go both to mosque and to church. If they don't get what they want from one they try the other.

To get at the real beliefs of either Moslem or Christian is most difficult, but I have it, on what I believe is very reliable authority, that many of the so-called Christians will admit to a belief in two conflicting powers of light and darkness, and also that the sun and moon, with which they tattoo, have something to do with this.

Twice during heavy thunderstorms I was told by my men that Kulshedra and Drangue (*Drangoni*) were fighting. Kulshedra is a female monster that strives to destroy humanity with torrents and tempests, and Drangoni is a male being who beats her back. Men and male animals can become Drangonis, and women, serpents, and other noxious creatures Kulshedras. The tribesman has an intense belief in the innate depravity of all things feminine.

Fasting was much practised by the Bogomils, and the keeping of fasts most rigidly is the only law of the Catholic Church which the people strictly observe. These facts all point to lingering belief in a form of Manicheism.

The second tribal group I visited was the *Pulati* group, called also *Maltsia e vogel*, the small mountainous land. Here also a tale of immigration is told by the more important tribes, but of immigration, not from the north, but from the east, the district known in earlier days as *Rashia*. These people tell that they arrived before the *Maltsia e madhe* people did. As the Turks penetrated *Rashia* considerably before they subdued Bosnia, this tale also is probably true. They too tell that they found previous inhabitants who were a small dark people. In the tribe of *Shala* there are still eight houses that trace descent from these early inhabitants. The other families migrated in a body "a long time ago" to the neighbourhood of *Dechani* (probably at the end of the seventeenth century, when the Serbs left it in numbers and fled to Hungary). I remember, when at *Dechani* in 1903, being greatly struck with the small very dark Albanians there, for I had previously known only the fair type. There was fighting going on with the Turkish troops not far off, and the country was reckoned in a dangerous state, and a lot of these little dark men kindly came and formed an armed escort for me when I went for a walk. *Shoshi*, the neighbour tribe to *Shala*, and consanguineous with it, tells the same tale, but here the small dark people have been wholly absorbed. They have, however, left their mark throughout *Pulati*, where the number of small dark people largely exceeds that in *Maltsia e madhe*.

The typical fair man, common in *Maltsia e madhe* and found in all the other districts, is a rather tall man with a yellow moustache, a fine cut aquiline nose and a long strong jaw. His eyes are grey or even quite blue. The bridge of his nose is narrow and his eyebrows slope downwards, often markedly so. His skin, where not sunburnt, is white. He is often a really fine animal, and very well aware of the fact.

The small dark man is insignificant in appearance, and usually an ugly little fellow. His eyes are brown, his hair grows low on his forehead. Sometimes a hairy line extends along the temple to the outer corner of the eyebrow, giving him an oddly monkey-like look. His skin is olive.

Between these two types there are, of course, any amount of links. The type which the Albanian himself considers Albanian is the fair aquiline type. From the high Albanian mountains right down to the Greek frontier the Albanian tells you "We are a fair people." And as he has never been worried by theories of dark and fair races, perhaps he knows.

The question, as to what these dark and fair races are, is a very difficult one and I do not think my theories on the subject are of any value; so I will only give the statements of the people themselves and say that, roughly speaking, I found the high Albanian tribes fall into three groups:—I. *Maltsia e madhe*, which tells of a large immigration from the north, and intermarriage with previous inhabitants; II. *Pulati*, with a tale of immigration from the east and similar intermarriage; and III. A group of tribes which tells of no immigration, and boasts that it has always been on the spot. This includes the *Puka* group, or part of it. The *Berisha* and *Merturi* men, who belong to this, vow that they have been there for ever. They also say that the Albanian is a fair man. It is noteworthy that in the districts where such a tale is told the place-names are all Albanian, save a few that appear to be Latin. In *Maltsia e madhe*, on the other hand, there are many Slavonic place-names.

An accident quite prevented my going to *Merturi*, but I visited the *Berisha* men, a most lively lot—the only ones that very nearly greeted me with bullets. But that was because I came with men who happened to be "in blood" with them. I vainly tried to kodak them as they dashed from cover to cover, howling like hell-hounds, and aiming at my men with their rifles. It was "touch and go," but they were very sorry afterwards, and we became great friends. They brought me offerings of honey and *rakia* and begged me to stay at least a year, and I spent a week with them. These up-country tribesmen, who have rarely seen a foreigner (*Berisha* remembered one British consul and two Austrians), are very childlike, and change from one mood to another all in a minute. *Berisha*, so far as I saw, was mixed dark and fair, with a large proportion of dark.

Berisha and *Merturi* are important tribes, for they have overflowed and sent branches in many directions. The *Merturi* founded the town of *Djakova* about 400 years ago, and it is noteworthy that all the *Djakova* men that I met who claimed descent from *Merturi* were fair.

Customs differ somewhat in these various groups. The *Maltsia e madhe* group is by far the most tattooed. It is also the fairest group. The darker *Pulati* people are very much less tattooed. We may perhaps deduce from this that the fair immigrant tattooed and the dark native did not. All through the tribes, whether dark or fair, I found the sun and moon symbols in one form or another.

I will now pass on to some tribal customs.

A *fis* or tribe in Albania consists of one or more *bariaks*, that is, groups of men that fight under one standard. Only one of these standards now bears a special tribe mark so far as I have learnt—that of the *Mirdites* of *Oroshi*, which has a rayed sun.

In some tribes all the *bariaks* trace descent from a common male ancestor, and the divisions have only been made for convenience when the tribe grew large. In other cases certain *bariaks* are of other blood, and have been adopted into the tribe for various reasons.

The tribes are strictly exogamous. That is, they invariably take wives from outside the tribe, excepting only when a *bariak* within it is of different blood. Male blood only counts. (In a few cases it has been decided by a tribe that certain *bariaks*, though of common origin, are now sufficiently removed to be intermarriageable. But these are exceptions.) The rule is so strict that even tribes who trace origin from several brothers will not intermarry. Thus *Shalah*, *Shoshi*, and *Mirdita* are not intermarriageable. All descendants of a common male ancestor rank as brothers and sisters, and their union is looked on as incestuous and in the highest degree horrible. The offspring, I was repeatedly told, would be blind, deaf, dumb, deformed—all kinds of misfortunes would befall. There would be a curse on such a union, "for truly they are brothers and sisters, and it is forbidden to marry one's own blood." An exceptionally intelligent old *Hoti* man, a great authority on tribe law, when I asked how many generations must pass before *Hoti* could marry within the tribe, replied that "he hoped it would never be, for that even after a thousand years the blood will still be that of *Geg Laz* (the tribe's forefather), and they would still be brothers and sisters, and to marry your sister is a great sin." So deeply rooted is the feeling that in all my eight months of wandering I heard of only one instance in which the law was broken. A girl eloped with a distant cousin on her father's side. He was far enough removed for the Roman Church to marry them. But it was incest in the eyes of the outraged family. The luckless couple fled to another tribe for shelter, but were hunted down. The bridegroom was shot within the year, as was also his brother, who had aided the elopement and the bride's life was only saved by the intervention of the *Franciscans*. Tribe law is stern and merciless.

Female blood does not count at all among the *Moslem* tribes, nor did it till quite recently among the *Christians*. Now the priests strive and partially succeed in enforcing the *Canon Law* that prohibits the marriage of cousins to the sixth degree on both sides. *Pope Clement VII*, whose mother was an *Albanian*, sent the *Archbishop of Antivari* as *Visitor Apostolicus* to the *Albanian mountains* in

1702. His report is a bitter lament. All the tribes, he says, are given over to pagan practices. "Among the execrable customs of the mountain people, the wretched parents are in the habit of buying young girls for a price for their sons who are of tender age, and of keeping them in their houses till of age to cohabit, and of omitting to contract matrimony unless a male child be born, even after fifteen years of sinful cohabitation." This shows that the Church then had no control over the marriages, and the custom of not marrying legally till a male is born is not yet extinct.

As it has been the almost universal practice to take a wife from the tribe next door and to marry the resultant daughters back into it (unless of course the tribe be one that is consanguineous), it follows that certain tribes must be very closely inbred on the female side. So far as I could learn among the Moslems two tribes will go on exchanging daughters backwards and forwards for generations (I ascribe to this practice the very marked type of the Moslem tribes); and it has only recently been checked among the Christians. But the people declare that such tribes are in no way related—have not one drop of the same blood. I said a child had some of its mother's blood, but they said, "No, only the father's."

The people all know most exact lists of their relatives on the male side. The fact that I could not enumerate my paternal cousins beyond second cousins was reckoned as a proof of the barbarous state of English society. "Just like dogs or cattle." In fact, many of our habits, about which they perpetually questioned me, filled them with contempt or disgust, and they explained the superiority of their own.

Whatever may have been the origin of marrying outside the tribe it does not now at all depend on the fact, often noticed, that close living together tends to bring about prohibitory marriage laws, for tribe land is extensive, tracks very bad, and houses many hours distant apart.

It seemed incredible to me that tribe law should be so strong that, say, twelfth cousins should never desire to marry one another. In practice, however, they are rarely given the chance. All marriages are arranged by the elders, usually before the parties have reached maturity, and in a very large number of cases they are married before they have had time to make a choice. Marriage is entirely by purchase, except for the occasional forcible capture of a girl. Just before I went to Thethi, a *bariak* of the Christian tribe of Shala, they had had the effrontery to seize a Christian girl of Scutari when gathering sticks just outside the town and carry her off. Such however were her terror and misery that the local Franciscan induced them to release her unharmed. A girl was stolen too while I was in Skreli and supposed to have been sold to the Moslems of Krasnichi.

Most of the children are betrothed in infancy or in early childhood. Some even before birth. A man, so soon as a son is born to him, seeks a suitable family with which to be allied, and should there be no daughter available, bespeaks the next one born. He often pays down part of the price as soon as she is born, and

the balance later when she is handed over. The price in the richer tribes is from sixteen to twenty napoleons; in the poorer ones from ten to sixteen. It may be paid in money or its equivalent. A man too poor for anything better can swap an old rifle for an elderly childless widow.

Girls are married as young as thirteen and boys at fifteen, or even fourteen. But the age is rising. I found the more intelligent heads of houses in Maltsia e madhe objected to giving a girl under sixteen or allowing a youth under eighteen to have a wife, unless an extra woman was needed for the housework, in which case they said they would give a wife to a boy of sixteen. In such a case as this it is not unusual to give a boy a wife very much older than himself, possibly a widow, a strong full grown widow being needed. I met one case in which a boy of fifteen was married to a woman of twenty-five. Husband and wife had rarely or never seen one another previous to marriage. I never heard of a case in which a youth refused the bride provided for him. When I remarked on this, people said: "Why should he? A woman is a woman; God has made them all alike." Of the girls they said cheerfully, "Oh! they get used to it after a week or two." Such a thing as romantic affection appears to exist but rarely.

A girl can escape the husband to whom she has been sold in one way only. Should she resolutely refuse to be married to him she may, by tribe law, swear perpetual virginity before twelve witnesses, and she is then free and has certain privileges. In Maltsia e madhe she can inherit her father's land should he leave no son. From her it passes to the nearest heir male. She may dress as a man and carry arms, and often does so; she may also take blood vengeance as a man does: but this is seldom done, I believe.

Among the other tribes she cannot inherit land, which passes straight to the next heir male. He however must pay her yearly out of the estate 300 *okas* (about 650 lbs.) of maize, 18 *okas* of rakia, and 30 *okas* of wine. Should he fail to do so she can enforce payment by an appeal to the Council of Elders. Among these tribes I saw no virgins who wore male attire, and was told it was not customary. In Maltsia e madhe I met several. This practice of swearing virginity to avoid marriage with a man disliked prevails, I am told, among the Moslem as well as the Christian tribes. But I met no examples. I heard of one who had served in the Turkish army.

In all parts a sworn virgin is allowed to eat with the men and is treated as an equal, exchanges tobacco, and is generally "Hail! fellow, well met," in striking contrast to the position of a married woman.

No tribesman eats with his wife; and the odd custom still prevails of a married couple never addressing each other by name. To eat with a woman seems to be thought very degrading. The men eat first and the women eat up the bits left over afterwards at the other end of the room, or, if Moslems, in their own quarters.

I was always treated with great honour and classed with the buck-herd. No woman was allowed to eat with me in a tribesman's house. I ate with the men,

but as they had to draw the line somewhere, they often helped my horse-boy first. Sometimes they would not even let a woman speak to me. They are tremendous talkers, and found a foreign female far too amusing to be wasted on their women. They also seemed to have an idea that as I am unmarried I belonged to the sworn-virgin class and was fit to be associated with. Moreover both Albanians and Montenegrins have a proverb which says "Long hair, short wits—a woman's head!" and being a simple-minded folk they jump to the conclusion that the converse holds good, and credit me with extraordinary intellectual power. This landed me often in very difficult positions, as the political situation was strained almost to breaking point, and I was called in to advise.

Among the Moslems I had to live night and day in the men's quarters, and even in the great chieftain's house of the Christian Mirdites no woman was allowed to come near me. I did not even see one, though I heard them scuffling behind the door to get a squint at me, but the men chivied them.

An Albanian tribesman, whether Christian or Moslem, has but one wife at a time, unless he choose to take as well his brother's widow. This by tribe law he may do one month after her husband's death. As all men of a tribe rank as brothers, it follows that a man may take his cousin's or uncle's widow, or both, should there be no nearer male relative than himself surviving. I heard of a case at Thethi in which a man had taken his uncle's and his cousin's widows, and wished to add a third and legal wife to his household—which caused conflict with the priest. This custom prevails everywhere except in Maltsia e madhe, where if it ever did exist (which I failed to learn) it has now been extinct long enough to be considered incestuous, and I had dinner with some men who had recently shot their brother-in-law for indulging in it.

In Nikaj, an outlying Christian tribe rarely visited by foreigners, this custom is rampant, in spite of the frequent excommunication of guilty parties by the Franciscan mission-priest. Here and in several other places, as hell-fire was not enough to terrify them, I was asked to threaten them with the wrath of King Edward VII. I tried hard to learn the people's reason for this practice. When there is no child, and the husband has been shot very soon after marriage, there is no doubt that the idea is to beget a child that is to rank as his. Children so produced are still reckoned by many people as the actual offspring of the dead man, in spite of the Franciscans, who study medical works, and gravely assure their flocks that the thing is impossible.

Where children already exist, the arrangement is largely one of convenience. The woman must remain in the house to bring up the children. If there be an unmarried brother in the house he can thus obtain a wife without paying for her—a great consideration in a poor family; also as one young man explained very earnestly the woman is to be considered. He was excommunicated, and so was all his communal household (eighteen persons), because of his relations with his cousin's widow. He said, "She has three children, so she must stay with us to bring them up, and so of course she cannot marry again." (It would be contrary

to all tribe law to bring a strange man into the house.) "But she is only twenty-four, and to force her to live a single life would be very wrong. That is why I have taken her. I have a wife already, so I do not need her. I am sorry I am excommunicated, but I am an honourable man and I must act rightly to my cousin's widow."

A childless widow in Maltsia e madhe reverts to her own family, which can sell her again, and generally does so at once. In other tribes the husband's family has the right of keeping her. If they decide to sell they divide the price obtained with her own family.

A widow long married and childless is of slight value, as probably incapable of child-bearing. A young healthy widow, married but a few months, is on the other hand snapped up at once, and often fetches a higher price than a maiden.

There is a dearth of women in High Albania. The people declare that it is because God knows that many men will be shot, and so provides an extra supply. I believe myself that one of the reasons is, that owing to the very young age at which girls are married, there is a cruelly high death-rate in child bearing. But in some of the tribes where church registers of baptisms and deaths have now been carefully kept for some years it really appears that a considerable excess of males is born and reaches maturity. Then the male death rate from gunshot wounds is high and thins them off a bit.

Life among the outlying Christian tribes is so primitive that I doubt if I can make it understood. The communal family lives in a *kula*, a great stone tower two or three storeys high. It has no windows, only loopholes for rifles. It is often perched on a rock for better defence. The ground floor is a pitch-dark stable. The entrance to the dwelling is by a flight of stone steps to the first floor. An awful stench grips your throat. In pitch darkness you climb a wooden ladder to the living room up under the stone roof on which the sun blazes, making it as hot as a furnace. Thirty or forty human beings of all ages and both sexes are here crowded together. Here they are born and die, and here they bring their new bought brides without any kind of privacy whatsoever. The house is ruled by the *Xoti i shpis*, the house-lord, and all the household obey him like dogs. If you ask why, they will tell you it is because he is the head—the right to rule is in his branch of the family—God made him head—if he is head of course you must obey. In some cases he still has power of life and death over his subjects.

The house is often filthy beyond all words. Though the painted chests ranged round the walls may be full of fine embroidered clothes for festivals, and silver-mounted pistols hang on the walls, the people are clad in dirty rags on which the lice crawl calmly. The little children are often naked. The axe-hewn planks of the floor (made by cutting down a tree and then chopping all of it away till a plank of the right size is obtained) are caked with dirt and saliva. Two sheep or goats are tethered in a corner, fetlock deep in dung. They bring luck to the house and promote its fertility. You sit on this floor or on a log. If there be a chair it is the throne of the house-lord and, especially in Shala and Shoshi, is possibly

adorned with a carved sun at the back, and a crescent moon on either arm. Through the floor rises the hot reek of ammonia from the stables, and you are scarcely seated before a black cloud of buzzing flies settles on you. The house-lord entertains you with elaborate ceremony. He makes the coffee himself. It is an insult to offer a guest coffee made by a woman. And above all things the house-lord is a gentleman according to his lights. He offers you "bread and salt and my heart" (*buk e krype e zemer t'cmen*), which takes the form of rank sheep-cheese and *rakia* distilled from his own grapes. There are endless healths to be drunk, between each of which a bit of cheese is eaten. The *rakia* keeps down the cheese, and the cheese tames the *rakia*. If you are not prepared to undergo this ordeal do not enter a *kula*, for you will give dire offence. Hospitality is the law of the mountains, and the house-lord freely gives you of his best.

Amulets are freely worn to keep off the evil eye (*Syy i kec*). Albania swarms with devils and spirits (*Ore*), magicians and witches (*Shtriga*). Women in Albania are all born wicked. In some districts probably quite half the women have dealings with the devil. But it is very hard to detect them. *Shtrigas* can work many wonders, bewitch a man so that he withers and dies, or suffers aches and pains. A *Shtriga* can make herself quite small like a bee, and get into a house through the keyhole or under the door at night and suck a person's blood so that he fades and dies in time. The best safeguard is hard to get. A *Shtriga* always vomits the blood she has sucked. You must secretly track a woman you suspect to be a *Shtriga* when she goes out to vomit the blood. You must scrape some of it up on a silver coin and wear it, and then no *Shtriga* can harm you.

Nothing is too marvellous for a tribesman to believe. Here is a good example, which the teller, a man from Djakova, believes most firmly. A young married woman who was pregnant craved for wine, but the family was too poor to buy any. Her mother-in-law, who was a *Shtriga*, stripped the young wife quite naked and anointed her all over with a salve which she made, at the same time saying certain magic words. The young wife at once shrank to the size of a bee. "Go, my daughter" said the *Shtriga*, "to the cellar of old so-and-so, crawl in at the keyhole and drink all you want. But take care not to say the name of God." Off went the young wife to the cellar, entered and drank her fill. She then felt so much better that she cried "Thank God!" At once she became her natural size. "Oh what a dreadful position for a virtuous married woman," cried my informant with deep feeling, "to be in a strange cellar with nothing on at all!" There she had to stay till the owner of the cellar opened it next day. He was much surprised to find her, but as he was a very kind man, he lent her a coat to go home in and never doubted her explanation. And the Djakovan who told the tale knew the woman, knew the owner of the cellar, and had seen the keyhole. What more proof can you require? Moreover, as he remarked, how else can you explain the occurrence?

I saw a Moslem man who knew how to summon devils by hopping on one leg and waving the other behind him. But I was with Christian tribesmen, and such

was their terror that he would cast a spell upon me that they would not allow him to come within a hundred yards of me, much less let me see him perform.

When a child is born you should break an egg over its face to keep off the evil eye; and when a house is built you must kill a cock or a lamb and sprinkle the blood on the foundations. These two customs are still practised at Scutari, and the old fortress on the hill is one of the places, in the foundations of which a woman is said to have been built in the Middle Ages as an offering to the devils that destroyed it as fast as it was built.

At night in Albania the tracks are often infested with devils who take the form of flashes of fire, and no matter how well a man may know the way he cannot go on till the first cock crows and the devils disappear. A man I know who has been bothered in this way says it is no use to do anything but cross yourself and wait patiently for cockcrow.

Save for an iron pot or two brought from Scutari, and the coffee cups, everything used in the *kula* is home made. The bowls, spoons, and troughs are hacked rudely from lumps of wood. The clothes are home spun and home woven. The woollen stuff (*shiak*) is measured by the *Kuut*—the length of the forearm; the *Porchik*—that is the stretch of the thumb and index finger; the *Shplak*—the breadth of four fingers; and the *Plam*—the stretch of the thumb and little finger. Land is measured by the *Ar*, as much, that is, as two oxen can plough in a whole day. *Ar* appears to be connected with the Latin *arare*. The Albanian for a plough is *parmen*, and to plough is *me livrue*.

Distance is measured by the hour only, and corn by the horse (*kal*), i.e., horseload. Riches are flocks and corn and weapons. No tribesman has much in corn. Maize and milk are staple diet. Meat on feast days when people eat like boa constrictors.

The tribes are all self-governing. The amount of independence they enjoy, and whether or not they pay fines or tribute to the Turkish Government, depends upon their fighting power and the more or less inaccessibility of the tribe land.

Tribe government is by a council (*Medjliss*) of elders. This varies in number according to the importance of the business in hand. In Maltsia e madhe a full council to deal with matters concerning the whole tribe consists of the *Bariaktar* (hereditary standard bearer), two *Voyvodas*, twelve elders specially chosen for their knowledge of tribe law, and seventy-two heads of houses. The term *Voyvoda* is a Slavonic one, and does not occur in the other districts. Among the other tribes a full council consists of the *Bariaktar* and the heads of all the chief houses. In certain districts, notably Shala and Shoshi, an active radical party has sprung up lately called the *Dielmnii* (youth), which has elected its own head and refused to recognise the hereditary right in council of the *Bariaktar*. These new councils have passed some good modifications of tribe laws, and managed to enforce them.

The law of the mountains is known as the Canon of Lek Dukaghin. He was one of a chieftain family that ruled all Pulati, Puka, Mirdita, Luria, and Ljuma in the middle ages, and down to the taking of Scutari in 1479 by the Turks. Lek

(Alexander), whose identity cannot be determined—there were several of the name and a mass of conflicting tradition—is regarded by the tribesmen with extraordinary awe. He is said to have come from Rashia with the ancestors of Shala, Shoshi, and Mirdita, and the present ruling family of Mirdita, now represented by Prenk Bib Doda, claims to be of Dukaghin blood. The tribes that were ruled by the Dukaghins still call themselves Dukaghini.

To Lek these tribesmen ascribe every law, almost every custom and habit that they have. That the bulk of the laws are, however, very much earlier than Lek's time is obvious. I am inclined to believe that the penalties chiefly are his.

To the tribesmen, however, all the so-called laws of Lek are as divine decrees; and especially does he believe that Lek ordered blood vengeance. Into the complicated rules of blood I have not space to enter. They dominate the whole life of the tribesman. Everything turns on *ghak* (blood). I have discussed it endlessly—for the family blood feud is the main topic of conversation—and collected a mass of cases.

It is usual for writers who do not know him to denounce the tribesman as a vulgar murderer, who kills wantonly for the sake of killing. But in order to understand a custom one must see it through native eyes. After living some eight months among blood-hunters, I perceived what *ghak* meant to them. It is not so much a punishment which they inflict, as an act performed for self purification, and as such a solemn and necessary act. For there are certain offences that blacken, not merely the honour of the man against whom they have been committed, but blacken also the honour of his whole house and even of his tribe. Only blood can cleanse the stain. And the man whose honour is blackened is obsessed with the idea of his own impurity. It gives him no rest. Blood he must have. In all the outlying tribes in which the blood laws are quite unmodified, male blood of the offender's house, even of a quite distant cousin, suffices; or if the affair be intertribal, blood of the offender's tribe. In such cases an absolutely innocent man who is ignorant of the cause of offence may be sacrificed; and his blood cleanses the other's honour, who, triumphant, announces his deed. He is now in turn liable to be shot, and should he have slain a man of his own tribe, by tribe law his house will be burnt, his corn burnt, and in some districts his trees felled and his cattle slaughtered too. But all this is of but small moment. His honour is clean, and if he must die he dies happy.

A man of the Christian tribe of Nikaj who was seeking blood was exhorted by the Franciscan to desist, and threatened with the torments of hell. "I would rather clean my honour and go to hell," he replied, and went out to slay. He slew, but was himself mortally wounded. The Franciscan hastened to the spot, and begged him to confess and repent while yet there was time. The dying man said, "I do not want your absolution or your heaven, for I have cleaned my honour." And he died.

We may regret that "his honour rooted in dishonour stood"; but there is a tragic grandeur about the man who is ready to sacrifice all he has, all that he

holds dear, and even life itself, in order that he may do that which he believes to be right. It is not every one that is prepared so to act up to his ideals.

When you meet a tribesman and he drinks to you, *Tu ngbiat tjetër* (long life to thee), remember to drink *Tu ngbiat me ncers* (long honour to thee) in return; for honour is better than life—in Albania.

APPENDIX.

TABLE OF THE TRIBES OF NORTH ALBANIA.

Maltsia e Madhe Group. (Great Mountain Land.)

I. *Gruda*.—A tribe of one *bariak*, situated between the River Tsem and the Montenegrin frontier. North of it is the Kuchi tribe (Montenegro), and south the Hoti. Gruda consists of about 500 houses (a house is vaguely reckoned in *Maltsia e madhe* as eight or ten persons). Of these eighty trace descent from Berisha (see below), and the remainder, who are called Gell (? *Djell*), are immigrants from the Herzegovina. They state that the church of Gruda was built 380 years ago, shortly after their arrival. Gruda is now about half Moslem and half Catholic. The Berisha and Djell stocks are intermarriageable.

II. *Hoti*.—A large tribe situate south of Gruda and extending to the shore of Scutari Lake. On the east it is divided from Kastrati by the Licheni Hotit, an arm of the lake. It consists of one *bariak* of about 500 houses. All are Catholic but three, those of the Bariaktar's family. This turned Moslem seven generations ago. All Hoti, except twelve houses, traces descent from Bosnia. These twelve are called Anas, and are of unknown origin. They were there when Hoti came.

Shortly after the building of the church of Gruda, thirteen generations ago, Geg Laz, the ancestor of Hoti, arrived with his family. Geg was one of four brothers. The others were Piper, Vaso, and Krasni. From these descend the Piperi and the Vasojevichi of Montenegro, who are Serbophone and belong to the Orthodox Church. Krasni is ancestor of the Krasnichi, now Moslem and Albano-phone (see below). Hoti is consanguineous also with half the Triepshi tribe, which branched from it later, and reckons consanguinity also with part of Nikaj because it branched from Krasnich, which is consanguineous. Marriage is, therefore, prohibited with all these. Hoti intermarries with the Anas, but mainly marries with Kastrati.

III. *Kastrati*.—Consisting also of about 500 houses, lies between the Licheni Hotit and the Skreli tribe. 300 houses trace descent from one Delti or Dedli, who came with his seven sons from the *bariak* of Drekalovich of the Kuchi. This in turn traces origin from Berisha (see below). The other 200 houses trace from people already on the spot when Delti arrived. They are said to have been Slavs. All are now Albanophone and the majority Catholic, the rest Moslems.

IV. *Skreli* is situated in the valley of the Proni Thaat. It is mainly Catholic, and traces its origin from Bosnia. It is one *bariak*.

V. *Kilmeni*.—A very widely-spread tribe of four *bariaks*—Seltze, Vukli, Boga, and Nikshi. These descend each from one of the four sons of Kilmeni, the ancestor of the tribe. He arrived in the land about thirteen generations ago. Nevertheless, these four *bariaks* are now considered sufficiently far removed to be intermarriageable, and marry freely. This is exceptional. Kilmeni came vaguely "from the north." Seltze (300 houses, all Catholic) lies at the head of the valley of the Tsem Seltzit, one of the sources of the Tsem. The majority of the houses, Djenovich Seltze, descend from Kilmeni. The rest, Rabijenovich Seltze, are of other stock, some say from near Rijeka in Montenegro.

Vukli lies at Tsem's other source, Tsem Vuklit. It is ninety-four families (number of persons to a family unknown), all Catholic.

Boga lies at the source of the Proni Thaat. It is seventy-five families, almost all Catholic.

Nikshi (154 houses, almost entirely Moslem) lies between Vukli and Boga.

Kilmeni is migratory. It descends in large numbers to the plains near Alessio to pasture flocks in the winter, and returns to the mountains for summer. It has thrown out branches in several other districts (see below).

VI. *Lohe* (or *Lohja*).—A small tribe of one *bariak*, consisting of eighty Moslem and forty Catholic houses.

VII. *Rechi*, also small, and mostly Moslem. Rechi and Lohe are said to be of mixed origin from Shlaku and Pulati. Probably overflows of those districts.

VIII. *Rioli*, small Christian tribe. I passed through quickly, and did not learn its origin.

These three all lie between Skreli and Pulati, and the whole eight form the Maltsia e madhe group, and are included in the diocese of Scutari.

It is noteworthy that there is a sprinkling of Slavonic names throughout Maltsia e madhe.

On the shore of the Lake of Scutari, north of Scutari, is a small Moslem tribe, Kopliku, and between it and Lohe the small Moslem tribe Grizhi. Between Kopliku and Scutari is the orthodox Serbophone village of Vraka, the only Serbophone district in Albania. It is of mixed descent from refugees from Bosnia and Montenegro, who fled from blood. It reckons about 1,000 souls.

Pulati Group.

Pulati is difficult to define, as its ecclesiastical limits (the diocese of Pulati) extend farther than the tribes actually called Pulati by the people. Lower Pulati, or Pulati proper, includes four tribes.

I. *Ghoanni*.—A small Catholic tribe of one *bariak*.

II. *Plani*.—A Catholic tribe of one *bariak*, tracing origin from three stocks which are intermarriageable. One descends from Kilmeni (*q.v.*).

III. *Mgula*.—Small Catholic tribe, one *bariak*.

IV. *Kiri*.—Catholic tribe of one *bariak*.

The other tribes included in the diocese of Pulati are :—

V. *Shala*.—This is a very large and extensive tribe, occupying all the upper part of the valley of the River Shala, and reaching to the summits of the mountains that form the watershed on either side. Shala consists of four *bariaks*, Thethi, Petsaj, Lothaj, and Lekaj. All descend from a common ancestor. Three brothers are reported to have fled from Rashia when it was overrun by the Turks (this would be at the end of the fourteenth or beginning of the fifteenth century). One had a saddle (*Shala*), the other a winnowing sieve (*Shosh*), and the third nothing; so he said *Mir dit* (good-day) and went off. This is the legendary origin of Shala, Shoshi, and Mirdita. They still reckon that they are too nearly related to be intermarriageable. The *bariak* Thethi occupies the head of the valley. It consists of 180 houses, all Catholic. (A house in all Pulati averages many more inmates than in Maltsia e madhe, as the custom of large communal families prevails. There may be as many as forty, or even more.) Thethi is self-governing, and is almost independent of the rest of Shala. Petsaj, Lothaj, and Lekaj are said to have separated into three main houses 376 years ago. They are now *bariaks*. Lothaj and Lekaj have quite recently decided that they are far enough removed to be intermarriageable. Thethi and Petsaj will not intermarry within the tribe. Shala tells that, when it arrived in the land, there were already small dark people inhabiting it. With these they intermarried. Eight houses near Abate, lower Shala, trace origin from these earlier folk. The rest of them emigrated to Dechani. Shala is entirely Catholic.

VI. *Shoshi*.—Origin as above. It lies south of Shala on the right bank of the Shala River.

VII. *Toplana*.—Is a small Catholic tribe of one *bariak* lying east of Shoshi. It is in a very wild district, and has the highest death-rate from gunshot wounds of all the Christian tribes. It tells that it is very old.

The whole district occupied by the above tribes is called Maltsia e vogel, the Little Mountain Land. Also included in the diocese of Pulati is :

VIII. *Nikaj*.—This is an offshoot from the Moslem tribe of Krasnich (brother to Hoti, *q.v.*). Its ancestor Nikol left Krasnich while Krasnich was yet Christian. (Catholic or Orthodox ?). One hundred houses of Nikaj, the Tsuraj, trace descent from a daughter of Nikol who bore an illegitimate son by a gypsy which Nikol adopted. This is the only case of female descent I heard of. Nikaj is all Catholic. It is one of the wildest and most poverty-stricken of the tribes.

Puka Group.

Puka is a very large tribe of seven *bariaks* :—

Puka.—All Moslem. *Cheriti*.—Part Catholic, part Moslem. *Chiri*.—All Catholic. *Dushaj* (?)—All Catholic. *Komani*.—Catholic. *Kabashi*.—Moslem. And *Berisha* with *Merturit-Gurit*, all Christian. These two last are entirely Catholic. They tell no tale of immigration, but claim to be among the very oldest inhabitants. (See Gruda *ante*.)

Postripa Group.

Mazreku.—A small Catholic tribe on the Drin, east of Scutari.

Drishti.—All Moslem, small tribe.

Shlaku.—Tribe of one *bariak*, on right bank of Drin, all Catholic. Traces origin from Toplana (*q.v.*).

Dushmani.—A Catholic tribe of two *bariaks*:—Dushmani (160 houses) and Temali. It takes its name from one Paul Dushman, who was chieftain in the fifteenth century.

Suma.—A largely Catholic tribe on the right bank of the Kiri. All these are included in the Diocese of Pulati.

Mirdita.

The largest and most important tribe of all. It is wholly Catholic, and has an independent ecclesiastical head, the Abbot of Mirdita; and an hereditary Prince of the whole tribe, Prenk Biba, called Prenk Pas. It consists of five *bariaks*.

Of these three, Oroshi, Spachi, and Kushneni, trace origin from the original ancestor who fled from Rasha. (See Shala, *ante.*) They are therefore consanguineous and not intermarriageable. Nor do they marry Shala or Shoshi. They marry chiefly Kthela and Luria.

The fourth *bariak*, Fandi, belonged to the Ljuma group, but left it when Ljuma turned Moslem and joined Mirdita. The fifth *bariak* Dibri (not to be confounded with the Moslem Debra of the Ljum group) is also of another stock. These two *bariaks* are therefore marriageable with the first three.

Mirdita in all reckons 3,000 houses, with an average of ten souls to a house. The three first *bariaks* state that the Pestriku mountains were their original home.

Kthela.

With Mirdita in war marches Kthela. Mirdita and Kthela have the right to lead in all wars with the south. Hoti leads in all wars with the north. Kthela is a large tribe of three *bariaks*:—Kthela, all Catholic; Selati and Pelati, both mixed. Mohammedanism is spreading.

Moslem Tribes.

The wholly Moslem tribes nearly all lie to the east of the large Christian tribes, and occupy the lower lying and more fertile lands where the mountains sweep down towards the plains. They are reluctant to admit strangers to their territories, and very suspicious of questions.

Debra Group.

I. *Luria*.—Is the head tribe of this group, one *bariak*, 200 houses. In twenty there are still some Christians. No house is entirely Christian, and Islam is making quick progress. When Christian (recently) it intermarried considerably with Mirdita. Now marries the two other tribes of the group, Matija and Debra.

II. *Matija*.—Wholly Moslem ; I did not visit it. It is said to consist of 1,200 houses, and covers much land.

III. *Debra*.—All Moslem. I did not visit it. These three tribes are among the most independent of all.

It is noteworthy that Luria in the middle ages formed part of the Dukaghin principality, while Matija and Debra, it would appear, owned allegiance to Skenderbeg.

IV. *Arnji*.—A small independent Moslem tribe on the left bank of the River Mola. It is an offshoot from Berisha. Women wear Mirdita dress.

Prizren Group.

I. *Ljuma*.—A large and very independent Moslem tribe.

Along with it are grouped, Bruti, Mal i zi, Rechi, Vlas, and other small districts. They are all offshoots, so far as I could learn, of various Christian tribes, *e.g.*, Shala, Fandi, etc.

Djakova Group.

I. *Iashi*.—800 houses, all Moslem. Did not visit it.

II. *Tropopoja*.—300 houses, all Moslem.

III. *Hashi*.—Very large tribe vaguely reckoned at from 600 to 1,000 houses. Almost all Moslem. Occupies the Pestriku mountains which are the traditional home of the Mirdites (*q.v.*). Are not consanguineous with Mirdita.

Djakova and its immediate neighbourhood is almost entirely populated by offshoots from Berisha, Shala, Fandi, and Mirdita. These all recognise consanguinity with their mother tribe and do not intermarry with it.

Ipek Group.

This consists of Ipek, Gusinje, and Plava.

I. *Ipek*.—Albanian population from a number of stocks. In neighbourhood a number of Serb Orthodox villages. Also Albanian villages, some hailing from Shala and Berisha. At Dechani, the dark stock from Shala (*q.v.*).

II. *Gusinje*.—All Moslem except a small Serb Orthodox population. Gusinje has never been Catholic. Much of the Moslem population can speak Serb. Stock very mixed.

III. *Plava*.—I did not visit. Said to be of mixed stock, some from Hoti (*q.v.*), some from a very old stock called Pagani.

NOTE ON THE TRIBES CONSANGUINEOUS WITH HOTI.

I. *Krasnich*.—I could not visit this tribe, as it was badly at blood with all its neighbours, and objects also to all foreigners. It has a powerful chieftain, Shaban Benaku, who traces direct descent from Krasni the brother of Geg Laz, ancestor of Hoti. It is noteworthy that *Krasan* is Serb for "beautiful," *Krasnik*, "a handsome man," for the tribe stems from Bosnia. Also, that though now all Moslem Krasnich

men will go to the Serb Monastery Church of Dechani for holy bread, so do the Catholics of Nikaj who are consanguineous with Krasnich. A Scutari man, who managed once to penetrate Krasnich in disguise, told me the plot of a long ballad he heard sung there which struck him much. It is precisely the same as one published in Serb among the collected ballads of Bosnia.

II. *Piperi*.—In Montenegro, all Orthodox and Serbophone; did not throw in its lot with Montenegro till 1790.

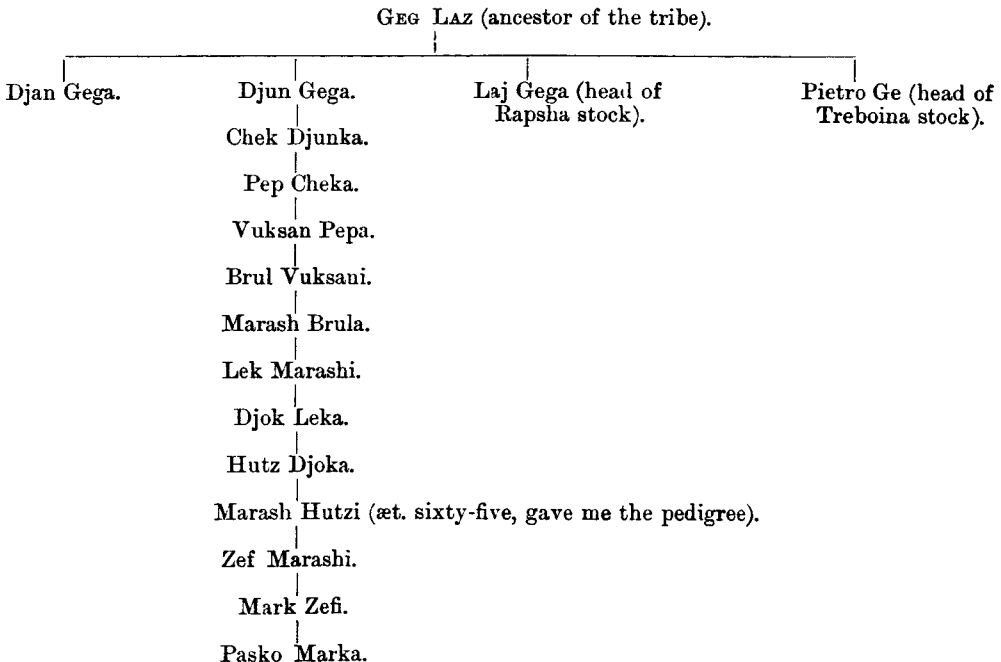
III. *Vasojevich*.—Is since the Treaty of Berlin half Montenegrin and half under Turkey. Is all Orthodox and Serbophone. It is noteworthy that in the Montenegrin part many Albanian proper names occur with Serb terminations, e.g., Dedich and Dedovich. Ded = Domenic in Albania.

Other Montenegrin tribes consanguineous with Albanian ones:—

Bijelo Pavlich.—One of the largest Montenegrin tribes, also joined Montenegro in 1790. It traces origin from Bijelo Pavlo (White Paul), one of the Dukaghins of Mirdita, known in Mirdita as *Pal i bardh*. The tribe is all Orthodox and Serbophone.

Kuchi.—Kuchi has been included in Montenegro since 1877. It fought on the Montenegrin side in the last war. One of its *bariaks*, Drekalovich, traces direct descent from Berisha in Albania. It is now, I believe, all Serbophone.

Example of a Pedigree from Hoti, High Albania.



Description of Illustration on p. 455.

- Fig. 1.—“Sun and moon” chair, Shela.
 „ 2.—Variant design of arm end.
 „ 3.—Cross-terminating in “suns,” Thethi.
 „ 4.—Series of common wooden crosses showing all stages of pattern.
 „ 5.—Wooden headpost and head and footposts of Moslem graves (Hashi and Puka).

Description of Plate XXXI.

- Fig. 1.—Nos. 1-7. Tattoos common among the Christians of the tribes of Malsia e madhe, N. Albania.
 „ 8-11. Common tattoos (Roman Catholic), Bugojno, Bosnia.
 „ 12-17. More elaborate examples from Jaju, Bosnia.
 „ 18-23. Bosnian tattoos collected by Dr. Truhieka—
 No. 18. The ear of corn.
 „ 19. “Ograda,” the palisade.
 „ 20. “Kolo,” the circle.
 „ 21. The moon.
 Nos. 22, 23. The cross.
 „ 2.—Gravestones in Roman Catholic graveyard, Dushmani, N. Albania (showing variants of cross, crescent, and sun—all recent).

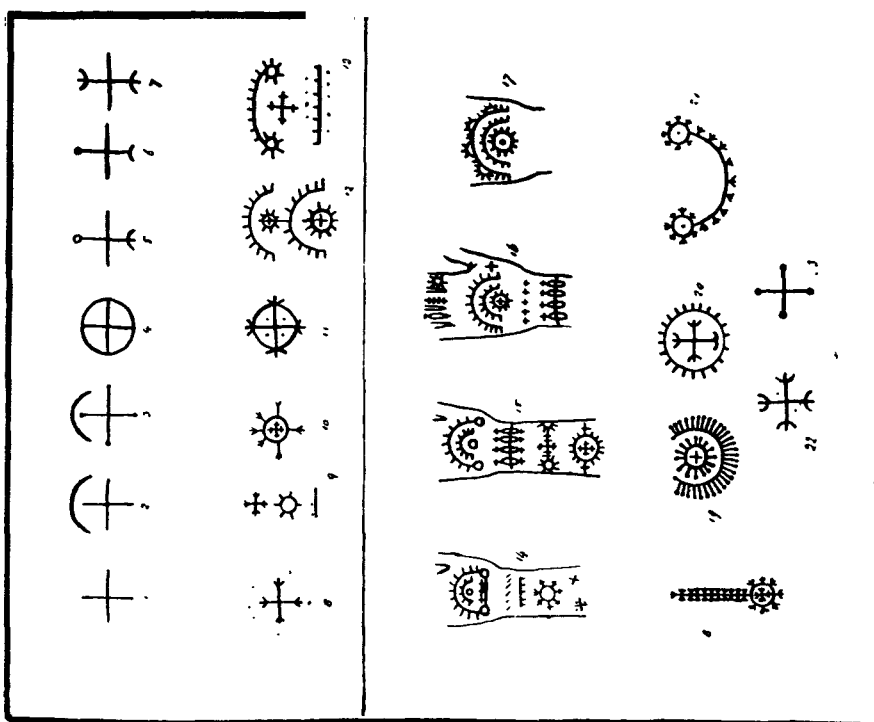


FIG. 1.

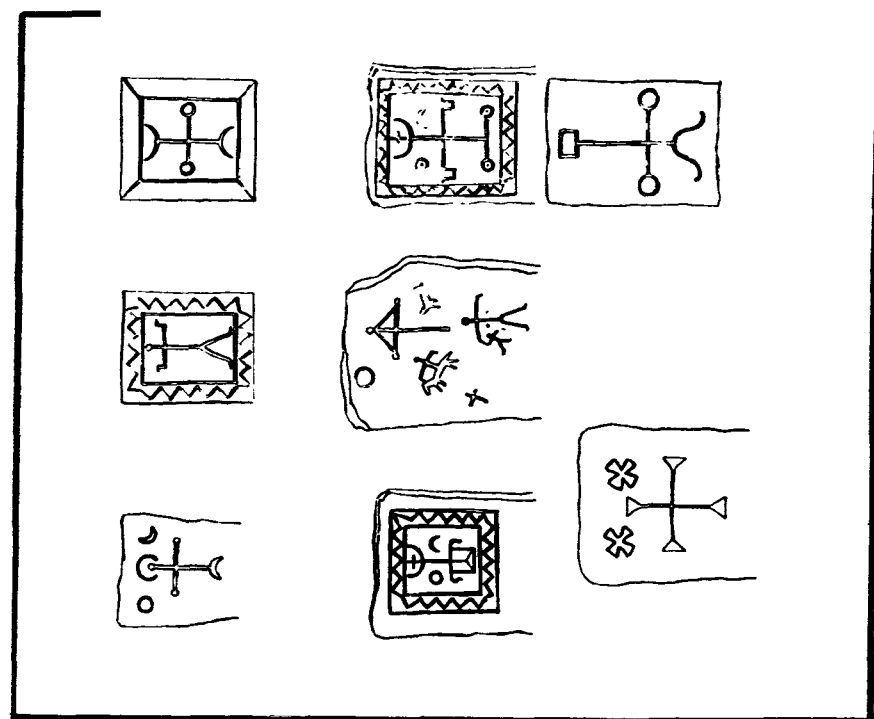


FIG. 2.

HIGH ALBANIA AND ITS CUSTOMS IN 1908.

A NOTE ON THE MASAI SYSTEM OF RELATIONSHIP AND
OTHER MATTERS CONNECTED THEREWITH.

BY A. C. HOLLIS.

THE principal terms of relationship used by the Masai are as follows:—

	Spoken of indirectly.	Addressed directly.	Remarks.
Father	<i>menye</i>	<i>papa</i>	My father, <i>papa</i> ; thy father, <i>mingi</i> .
Mother	<i>ngoto</i>	<i>yeiyo</i>	My mother, <i>yeiyo</i> ; thy mother, <i>ngutunyi</i> ; his, her or their mother. <i>ngotonye</i> .
Stepfather	<i>menye</i>	<i>papa</i> .	
Stepmother	<i>ngoto</i>	<i>yeiyo</i> .	
Brother	<i>ol-alashe</i> ...	<i>ol-alashe lai</i> or by name. Also, <i>ara-</i> <i>apa</i> (boy or man), and <i>le-eiyo</i> , <i>li-apa</i> or <i>le-papa</i> (girl or woman).	
Elder brother			
Younger brother			
Sister	<i>eng-anashe</i> ...	<i>eng-anaishi ai</i> or by name. Also <i>ne-</i> <i>ciyo</i> , <i>ne-apa</i> .	
Elder sister			
Younger sister			
Half-brother	<i>ol-alashe</i>	see brother.	
Half-sister	<i>eng-anashe</i>	see sister.	
Husband	<i>ol-moruo</i> , <i>ol-kitok</i> , <i>ol-paiyan</i> .	<i>menye-ngania</i> , <i>ol-</i> <i>moruo lai</i> or <i>le-</i> <i>moruo</i> , <i>ol-kitok lai</i> or <i>le-kitok</i> .	<i>Menye - ngania</i> means <i>the father</i> <i>of so-and-so</i> , a child's name to take the place of <i>ngania</i> .
2nd husband	<i>ol-moruo</i> , etc., see husband.	see husband.	

	Spoken of indirectly.	Addressed directly.	Remarks.
Wife ...	<i>e-ñgorōyōni, en-git-ok; e-siangiki</i> (if young).	<i>ñgoto - ñgania, na-ñgorōyōni, na-kit-ok; na-ito</i> (if young), or by name given by husband to wife at marriage.	<i>Ñgoto - ñgania</i> means the mother of so-and-so, a child's name to take the place of <i>ñgania</i> .
1st wife ...	<i>e-ñgorōyōni kitok</i> ...	see wife ...	1st wife. House on right side of kraal.
2nd wife ...	} see wife ...	} see wife ...	2nd wife. House on left side of kraal.
3rd wife ...			3rd wife. House on right side of kraal.
4th wife ...			4th wife. House on left side of kraal.
Co-wife ...	<i>eng-aïni</i> ...	<i>eng-aïni ai</i> or <i>na-aïni</i> .	
Son ...	<i>ol-ayōni, en-gerai</i> ...	<i>li-ayōni, cito, ciro, na-kerai</i> .	There are numerous pet names used by parents for small children, e.g., <i>ol-oip lai</i> (my shadow), <i>ol-kila lai</i> (my garment), <i>eng-oshoghe ai</i> (my belly), <i>manyit ainei</i> (my intestines), <i>láiishoo eng-Aï</i> (whom God gave me).
Eldest son ...	<i>ol-kikau</i> ...	<i>ol-kikau lai</i> (rarely used).	
Youngest son ...	<i>ol-duñgoret</i> ...	<i>ol-duñgoret lai</i> (rarely used),	
Daughter ...	<i>en-dito, en-gerai</i> ...	<i>na-ito, na-kerai</i> .	
Eldest daughter ...	<i>en-gikau</i> ...	<i>na-kikau</i> (rarely used).	
Youngest daughter	<i>en-duñgoret</i> ...	<i>na-duñgoret</i> (rarely used).	
Father's father ...	<i>ol-akwi</i> ...	<i>akwiya</i> (boy and man); <i>ngakwiya</i> (girl and woman).	
Father's mother ...	<i>okoi</i> or <i>koko</i> ...	<i>kokoo</i> .	

	Spoken of indirectly.	Addressed directly.	Remarks.
Mother's father ...	<i>ol-akwi</i> ...	<i>akwiya</i> (boy and man); <i>ngakwiya</i> (girl and woman).	
Mother's mother ...	<i>okoi</i> or <i>koko</i> ...	<i>kokoo</i> .	
Father's brother ...	<i>menye</i> , <i>ol - alashe -</i> <i>menye</i> .	<i>papa</i> .	
Father's elder brother	<i>menye kitok</i> ...	<i>papa kitok</i> .	
Father's younger brother	<i>menye oti</i> ...	<i>papa oti</i> .	
Father's sister ...	<i>ngoto</i> , <i>eng-anashe-</i> <i>menye</i> .	<i>yeiyo</i> .	
Mother's brother...	<i>ol-apu</i> (boy and man); <i>eng - apu</i> (girl and woman).	<i>apula</i> (boy and man); <i>ngapulaya</i> (girl and woman).	
Mother's sister ...	<i>ngoto</i> ...	<i>yeiyo</i> .	
Father's brother's wife	<i>ngoto</i> ...	<i>yeiyo</i> .	
Father's sister's husband	<i>ol-aputani</i> (boy and man); <i>ol-aputani</i> or <i>o-sindani</i> (girl and woman).	<i>li-aputani</i> or <i>ol-aputani lai</i> , <i>par-sindani</i> or <i>o-sindani lai</i> . Children say <i>papa</i> .	
Mother's brother's wife	<i>ngoto</i> ...	<i>yeiyo</i> .	
Mother's sister's husband	<i>ol-le-'sōtwa</i> or <i>ol-lo-'sōtwa</i> .	<i>menye-ngania</i> (or, if childless, by name). Children say <i>papa</i> .	<i>O-sōtwa</i> means peace or relation.
Father's brother's son	<i>ol-alashe</i> ...	see brother.	
Father's brother's daughter	<i>eng-anashe</i> ...	see sister.	
Father's sister's son	<i>ol-apu</i> (boy and man); <i>eng-apu</i> (girl and woman).	<i>apula</i> (boy and man); <i>ngapulaya</i> (girl and woman).	
Father's sister's daughter	<i>en-e-'ng-apu</i> ...	<i>ngapulaya</i> (boy or man); <i>ne-'ng-apu</i> (girl or woman).	

	Spoken of indirectly.	Addressed directly.	Remarks.
Mother's brother's son	<i>ol-le-'ng-apu</i> or <i>ol-apu</i> (boy or man); <i>en-e-'ng-apu</i> or <i>eng-apu</i> (girl or woman).	<i>apula</i> (boy or man); <i>ngapulaya</i> (girl or woman).	
Mother's brother's daughter	<i>en-e-'ng-apu</i> ...	<i>ngapulaya</i> (boy or man); <i>ne-'ng-apu</i> (girl or woman).	
Mother's sister's son	<i>ol-le-'sōtwa</i> or <i>ol-lo-'sōtwa</i> .	by name. Rarely, <i>ara-apa</i> , etc., see brother.	
Mother's sister's daughter	<i>en-e-'sōtwa</i> or <i>en-o-'sōtwa</i> .	by name. Rarely, <i>ne-apa</i> .	
Son's son ...	<i>ol-akwi</i> (man); <i>okoi</i> or <i>koko</i> (woman).	<i>akwiya</i> (man); <i>kokoo</i> (woman).	
Son's daughter ...	<i>eng-akwi</i> (man); <i>okoi</i> or <i>koko</i> (woman).	<i>ngakwiya</i> (man); <i>kokoo</i> (woman).	
Daughter's son ...	<i>ol-akwi</i> (man); <i>okoi</i> or <i>koko</i> (woman).	<i>akwiya</i> (man); <i>kokoo</i> (woman).	
Daughter's daughter	<i>eng-akwi</i> (man); <i>okoi</i> or <i>koko</i> (woman).	<i>ngakwiya</i> (man); <i>kokoo</i> (woman).	
Wife's father ...	<i>ol-aputani</i> ...	<i>li-aputani</i> or <i>ol-aputani lai</i> .	
Wife's mother ...	<i>eng-aputani</i> ...	<i>na-aputani</i> , <i>eng-aputani ai</i> or <i>yeiyo</i> .	
Wife's brother...	<i>ol-aputani</i> ...	<i>li-aputani</i> or <i>ol-aputani lai</i> .	
Wife's half-brother			
Wife's sister ...	<i>e-sindani e-anyit</i> ...	<i>par-sindan</i> or <i>e-sindani ai</i> .	<i>le-anyit</i> or <i>e-anyit</i> means <i>honoured</i> .
Wife's half-sister	<i>e-sindani</i> ...	<i>par-sindan</i> or <i>e-sindani ai</i> .	
Wife's sister's husband	<i>ol-le-'sōtwa</i> or <i>ol-lo-'sōtwa</i> .	<i>menye-āngania</i> (or, if childless, by name).	
Husband's father	<i>ol-aputani</i> or <i>menye</i>	<i>li-aputani</i> or <i>papa</i> .	
Husband's mother	<i>eng-aputani</i> or <i>āngoto</i>	<i>na-aputani</i> or <i>yeiyo</i> .	
Husband's brother	<i>o-sindani le-anyit</i> ...	<i>par-sindan</i> or <i>o-sindani lai</i> .	
Husband's half-brother	<i>o-sindani</i> ...	<i>par-sindan</i> or <i>o-sindani lai</i> .	

	Spoken of indirectly.	Addressed directly.	Remarks.
Husband's sister	<i>e-sindani</i> ...	<i>par-sindan</i> or <i>e-sindani ai</i> .	
Husband's half-sister			
Husband's brother's wife	<i>e-sindani</i> ...	<i>par-sindan</i> or <i>e-sindani ai</i> .	
Son's wife	<i>en-gerai</i> ...	<i>na-kerai</i> .	
Daughter's husband	<i>ol-aputani</i> (man); <i>eng-aputani</i> (woman).	<i>ol-aputani lai</i> (man); <i>eng-aputani ai</i> (woman).	
Brother's wife	<i>e-sindani</i> <i>e-anyit</i> (man); <i>e-sindani</i> (woman).	<i>par-sindan</i> or <i>e-sindani ai</i> .	
Half-brother's wife	<i>e-sindani</i> ...	<i>par-sindan</i> or <i>e-sindani ai</i> .	
Sister's husband	<i>ol-aputani</i> (man or boy); <i>o-sindani le-anyit</i> (girl or woman).	<i>ol-aputani lai</i> ; <i>par-sindan</i> or <i>o-sindani lai</i> .	
Brother's son	<i>ol-ayōni, en-gerai</i> ...	see son.	
Half-brother's son			
Brother's daughter	<i>en-dito, en-gerai</i> ...	see daughter.	
Half-brother's daughter			
Sister's son	<i>ol-ayōni, en-gerai</i> ...	see son.	
Half-sister's son			
Sister's daughter	<i>en-dito, en-gerai</i> ...	see daughter.	
Half-sister's daughter			

When listening to Masai talking to one another it would often appear as if many of the terms of relationship used were the same as names of cattle, sheep, goats, and donkeys, etc. This is chiefly due to the fact that whenever a woman is brought into the family by marriage it is customary for her husband's relations and their wives to give her an animal to show that she is recognized as a member of the family. The giver and the recipient ever afterwards call one another after the animal which has been given, to which the particle *pa-* is prefixed.

Thus, a man gives his brother's wife or his paternal uncle's wife, or his paternal uncle's son's wife a cow, a calf, or a lamb, and the terms of address used by the two, instead of being *por-sidan* or *yeyio*, as the case may be, are *pa-kiteñg*, *pa-ashe*, or *pa-supen*; a father-in-law gives his daughter-in-law a calf, and the two call one another *pa-ashe*; and a paternal uncle gives his nephew's wife a she-goat and calls her *pa-kine*. Similarly a man's first wife usually presents each successive wife with a calf on her marriage, and instead of using the term *na-āini* when speaking to one another the two women say *pa-ashe*; a woman gives her husband's brother's wife a donkey as a wedding present, and the two women call one another *pa-sighiria*; and a mother-in-law selects a cow for her daughter-in-law some months after marriage, when she has learnt to keep house for her husband, and the form of address is *pa-kiteñg*. This method of address is carried even further, and is used between men of the same family. A father, for instance, usually gives his son a bull when the boy is eight or nine years of age, and the two call one another *pa-oĩngōni* instead of *papa* and *li-ayōni*; a paternal uncle makes a similar present to his nephew, and the same form of address is used; an elder brother gives his younger brother a heifer, and the two call one another *pa-'n-dauwo*; and paternal cousins often use the terms *pa-oro* or *pa-meregesh* when talking to each other.

The following terms are found: *pa-kiteñg*, the bullock or the cow; *pa-moñgi*, the bullock; *pa-kĩshu*, the cows; *pa-oĩngōni*, the bull; *pa-'n-dauwo*, the heifer; *pa-buñgai*, the bull calf; *pa-ashe*, the calf; *pa-kuo*, *pa-oro*, or *pa-sitima*, the he-goat; *pa-kine*, the she-goat; *pa-balelo*, the kid; *pa-kerr*, the ewe; *pa-meregesh*, the ram; *pa-sighiria*, the donkey; *pa-supen*, the ewe lamb; *pa-mao*, the twin kids.

With one exception, a present of this nature is not made, nor are these terms of address used, outside the father's family. Thus, a brother cannot give his sister a heifer so that the two might call one another *pa-'n-dauwo*, because if the sister marries she will leave the family; a maternal uncle cannot give his nephew a bull and call him *pa-oĩngōni*, and maternal cousins may not address one another by the terms *pa-oro*, etc. The exception to this rule is made when a man marries. He then presents his father-in-law with a bullock and his mother-in-law with an ewe, and the terms of address are *pa-kiteñg* and *pa-kerr*. These presents have nothing to do with the cattle paid for the bride.

A maternal uncle (*ol-apu*) exercises great influence over his nephews, as it is believed that if he were to curse them they would die. He can at any time stop a fight in which one of his nephews is engaged by merely calling on his nephew to desist, as the nephew would be afraid of his right arm withering if he were to disobey. This power is to a certain extent reciprocal, and if a man were to start beating his wife he would have to stop if his maternal nephew ordered him to do so. A father and any old man of the family can also usually stop a fight by telling the combatants to desist, but they are not necessarily listened to. A mother has more influence, and if her son refuses to obey her, she strikes her stomach and says, "You were born in this"; whereupon the son is said to sicken, and can only recover when his mother makes a rope of fibre which she hangs round his neck.

Besides the power of a maternal uncle to stop a fight, he has also the right to take anything which belongs to his nephew. If the uncle desires anything that is the property of his nephew's father, the nephew must buy it from his father, who will at once give it up when he knows for whom it is required. This power of taking property is reciprocal, and in fact applies to all persons who address one another as *ol-apu*, *ol-le-'ng-apu*, etc. A nephew, for instance, can go to his maternal uncle's kraal, and if his uncle is absent, he can slaughter a goat or drink his uncle's milk, and nothing would be said. He cannot, however, drive off a cow without his uncle's sanction, but permission would not be refused. Other relatives have likewise some power of taking property. A boy or man can go to his father's or paternal uncle's kraal and take or demand a goat or milk, and in all probability nothing would be said, but if it were done repeatedly the father or uncle would express dissatisfaction or refuse altogether. A man may also go to his sister's husband or wife's brother (*ol-aputani*) and take anything, but an account is kept and the debt has to be returned. If a man is poor it is customary for him to live with one of his brothers-in-law (*ol-aputani*) and help to look after the stock. He is fed for his trouble, and as payment receives one out of every pair of twin goats born.

First cousins and second cousins may not marry, but there is no objection to third cousins marrying if the relationship is no nearer than *ol-le-'sōtwa* (or *en-e-'sōtwa*). Thus, a man's son's son's son may not marry the man's brother's son's son's daughter, nor may a man's son's son's son marry the sister's son's son's daughter, but there would be no objection to a man's son's son's son marrying the brother's daughter's daughter's daughter or the sister's daughter's daughter's daughter. Likewise though a man's son's son may not marry the man's maternal uncle's son's son's daughter, he may marry the maternal uncle's son's daughter's daughter. These unions are always contingent on the two parties not belonging to the same sub-clan.¹ The rules of consanguinity and affinity which regulate marriage also apply to the sexual intercourse of warriors with immature girls before marriage and to the rights of hospitality after marriage. No warrior may select as his

¹ The Masai are divided into five clans: *Il-Aiser*, *Il-Meñgana*, *Il-Mokesen*, *Il-Mōlelyan*, and *Il-Tarōsero*. Each clan is again divided into sub-clans, e.g., the *Il-Aiser* contain amongst others the following: *In-gidoñgi* and *Il-Parkeneti*. No man belonging to the *In-gidoñgi* sub-clan may take as wife the daughter of a man of the same sub-clan, but he may marry the daughter of the *Il-Parkeneti* or he may marry a daughter of the *Il-Meñgana*, *Il-Mokesen*, *Il-Mōlelyan*, or *Il-Tarōsero* clans. Members of the various sub-clans are usually to be found in all the districts and sub-districts. Marriages are not affected by geographical considerations, and a man has the same lawful marital relations in all the sub-districts as he has in his own home sub-district.

In his recent book, *The Ethnology of the A-Kamba and other East African Tribes* (Cambridge, 1910), Hobley states (p. 121) that the restrictions governing marriage amongst the Masai are far from simple, and he gives a number of complicated instances. As a matter of fact the rules are quite simple if one remembers (i) that though the clans are not exogamous, the sub-clans into which the clans are divided are exogamous; and (ii) that no man may marry a nearer relation than a third cousin, and then only if the terms of address used are *ol-le-'sōtwa* and *en-e-'sōtwa*.

sweetheart (*e-sarja*) a girl of the same sub-clan as himself, or one who is more nearly related to him than third cousin, and only then if the terms of address used are *ol-le-sōtwa* and *en-e-sōtwa*; and no traveller may cohabit with the wife of a member of his own age-grade if that man is married to one of his near relations, or to a daughter of his sub-clan.¹

The payment of the bridal price authorises a Masai to reckon the children which his wives bear as his own; it further gives him a full measure of control over both his wives and children, and they do all the household work and tend and look after his herds and flocks. But though individual marriage is recognised, sexual communism or something very like it prevails between all the men of one age-grade and the women of the corresponding age-grade, subject to the rules of exogamy and relationship, which forbid a man to marry or have sexual intercourse with a woman of his own clan or with a near relative. In other words the Masai may be said to live in a state of group marriage, based on the organisation of the whole community in age-grades, and restricted by the exogamy of the sub-clans and the rules regarding incest.

If a man is knowingly guilty of incest, or has sexual intercourse with a daughter of his own sub-clan, he is punished by his relations, who flog him and slaughter some of his cattle. If he fornicates or commits adultery with a daughter of a member of his own age-grade, he is punished by the members of his age-grade. His kraal is destroyed, he is severely beaten, and a number of his oxen are slaughtered. If a warrior or boy commits adultery with a wife of a man belonging to his father's age-grade, he is solemnly cursed by the members of that age-grade. Unless he pays the elders two oxen, one for them to eat and the other to enable them to buy honey wine, and prays them to remove the curse, it is supposed he will die.

If a man unintentionally commits incest—and it is quite conceivable that a man might not know his fourth or fifth cousin, for instance, should the two live in different districts—he has to present a cow to the girl's relations in order to "kill the relationship" (*a-ar eng-anyit*).

A man must abstain from having sexual intercourse with his wife as soon as she becomes pregnant, and he may not again have connection with her until the child cuts the two middle incisor teeth of its upper and lower jaws. Should this rule be broken it is believed that the child will never be strong. In the event of a man having intercourse with a pregnant woman, and thereby causing her to abort, he must submit to a punishment which is called *ol-kishuroto*. All the women of the neighbourhood collect together and, having stripped, seize the guilty person and flog him, after which they slaughter as many of his cattle as they can, strangling and suffocating the animals with their garments.

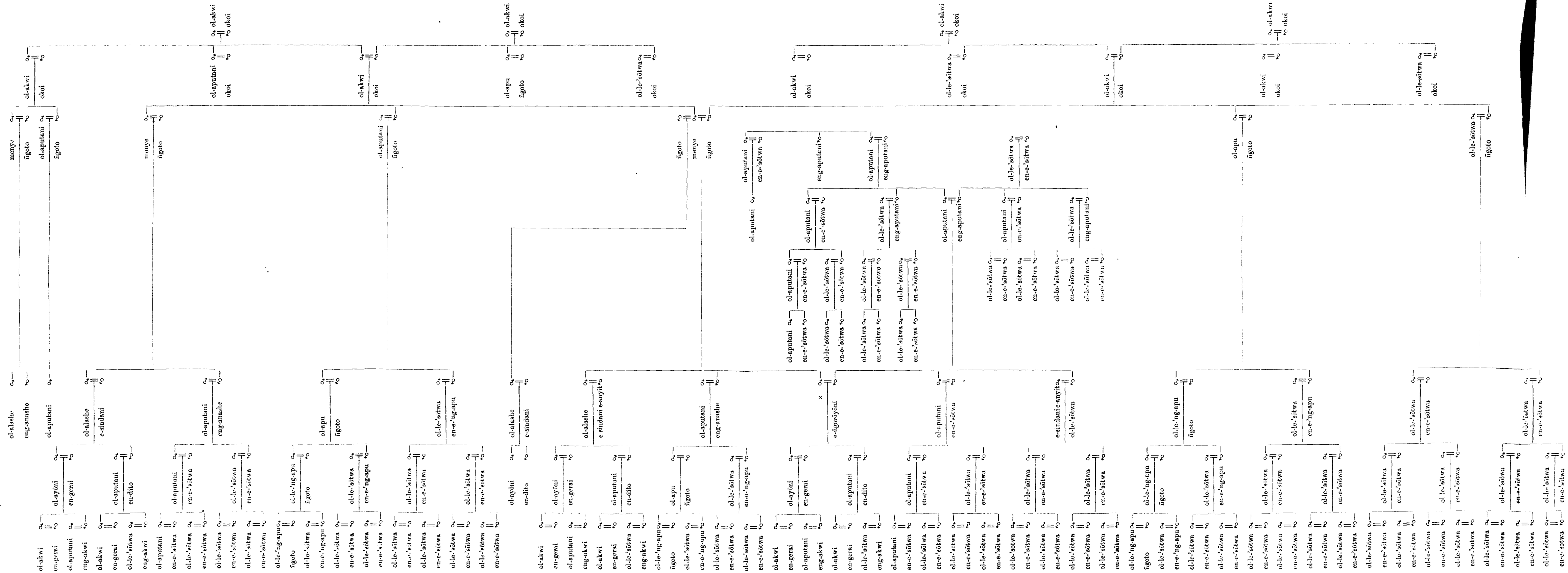
Other occasions when the sexes may not have sexual intercourse are when

¹ For the rules regarding hospitality see *The Masai*, p. 287. An age-grade consists of all those men who are circumcised at one of the four festivals held during every $7\frac{1}{2}$ years. See *The Masai*, p. 262.

poison is being made and when honey wine is being brewed. During the time that a man is making poison (eight days) he is treated almost as an outcast. He must leave his house at 4 a.m. and not return till 7 p.m., when he must rub clay on his body. He may not eat when the sun is above the horizon; he may only relieve nature far away from the kraal; and he must sleep alone. If he were to break any of these rules it is believed that the poison would be useless. When honey wine is to be brewed a man and a woman are selected for the purpose, neither of whom has had sexual intercourse for two days. A hut is set apart for them to live in until the honey wine is ready for drinking (six days), during which time they may not sleep together. As soon as the honey wine is ready they receive payment, and go to their respective homes. Were they to have sexual intercourse during the six days that the honey wine is brewing, it is believed that the wine would be undrinkable, and the bees that made the honey would fly away.

Mothers-in-law and their sons-in-law (*eng-aputani*) must avoid one another as much as possible, and if a son-in-law enters his mother-in-law's hut she must retire into the inner compartment and sit on the bed, whilst he remains in the outer compartment; they may then talk. Own brothers-in-law and sisters-in-law (*o-sindani le-anyit* and *e-sindani e-anyit*) must also avoid one another, though this rule does not apply to half-brothers-in-law and sisters-in-law (*o-sindani* and *e-sindani*). This rule is possibly due to the fact that when a man dies his own brother may not marry his widow, though there is no objection to his half-brother (paternal) or one of his paternal cousins taking her to wife. In fact, the only person who may marry a widow is one of the deceased husband's half-brothers or paternal cousins. It frequently happens, however, that widows never re-marry, but live with their children in the kraal of the eldest living brother of their late husband, who becomes the guardian of their children.

Divorce is almost unknown amongst the Masai, and it is only barren women who may be divorced. But if a woman is barren it is usual for her husband to give her some of his children by another wife to bring up. Daughters are usually selected; but if there are several sons the youngest and the youngest but two may be given to the stepmother. When a barren woman is a bad woman and is disliked by her husband and his other wives, she may be divorced, in which case her father or his heirs must refund the cattle paid for her, and she is at liberty to re-marry.



REPORT ON THE ROTHWELL CRANIA.

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THE great collection of human bones beneath the old parish church of Rothwell, near Kettering, in Northamptonshire, is, I believe, very little known to anatomists or anthropologists.

To me it seems of great importance that any exact record, however fragmentary, of these collections of bones which are scattered about the country should be preserved, because they furnish us with the only real clue we are ever likely to get of the physical structure of the inhabitants of different parts of our island in days before the present easy means of transit were available, in days when the humbler members of the community at least were laid to rest around the church in which they were baptized, and when there was little admixture of alien blood. I propose to treat these bones in the same way in which I treated those at Hythe, and would refer anyone who is interested in the subject to my "Report on the Hythe Crania," printed in the *Journal of the Royal Anthropological Institute*, vol. xxxviii, 1908, p. 419.

HISTORY OF THE BONES.

The vault in which the bones lie was discovered just 200 years ago by a grave-digger who was preparing a grave in the aisle of the church above. At that time no one knew of or suspected their existence.

The church was built in the latter part of the twelfth century, and Samuel Sharp, Esq., F.G.S., who read a paper to the Committee for Local Antiquities at Northampton in 1862, and seems to have known what he was talking about, says that the earliest possible date for the vault would be 1180.

The earlier church records are lost, and the present vicar, the Rev. A. Morley, to whom I am indebted for the kindest and most cordial help, and who takes the keenest archæological interest in his church and the bones, cannot give me any further documentary evidence.

I have looked up a large amount of speculative literature on the bones, much of

which is the purest surmise, and where supported by evidence at all, is done so by evidence which an expert can easily controvert.

George Busk, Esq., F.R.S., communicated measurements of eight skulls to the Ethnological Society in 1870, and quite correctly recognised that bones of women as well as those of men were present.

The paper by Mr. Sharp, already referred to, is valuable, and this gentleman had the good sense to recognise that the injuries seen in the skulls were probably the result of the spades and mattocks of the sextons who dug them up.

There is a valuable little pamphlet by R. B. Wallis, Esq., of Kettering, who, though not an anatomical expert, brings a great deal of accurate observation and shrewd common sense to bear on the problem of the origin of the bones.

A theory which seems to have deeply impressed the present occupants of the town is one published in a lecture by the late talented novelist, Major Whyte Melville. He regards the remains as those of Danes slain in battle by the Saxons, and supports his argument by a series of florid and, to me, fanciful and unscientific assertions.

Other suggestions, as far as I can see without a shadow of proof, are that the bones are those of men slain at Naseby, which is eight miles away as the crow flies, or at Bosworth Field, which is nearly thirty miles away; that they are the remains of a monastic burial place or the victims of an epidemic of plague.

The battle theories I am now quite accustomed to. I meet them whenever I visit a collection of bones. They are, I think, quite satisfactorily disposed of by the fact that female bones are just as plentiful as male, though of course they do not stand the ravages of time so well; and also by the fact that an anatomist can recognise accurately enough the difference between an ante-mortem wound and one inflicted on a skull which has become friable after many years in the ground. Naseby, as Mr. Wallis points out, is practically impossible, because it was fought in 1645, and if the bones had been bricked in at once all memory of the event would not have been lost by 1700. Moreover, only 1,000 men were killed at Naseby on the king's side (see Traill's *Social England*, vol. iv, p. 289), and presumably fewer on the side of the Parliament, so that, if it were not impossible for other reasons, Naseby could not account for half the bones in this crypt.

That many of these people died of the plague I am quite ready to admit. Plague epidemics were probably the commonest cause of death in mediæval England, and appeared at intervals of ten or twelve years. It is quite certain, however, that 5,000 or 6,000 individuals never died at Rothwell in one visitation.

To me it seems perfectly evident that we are dealing with one of the numerous ossuaries or charnel houses which were so common in pre-Reformation times, and of which the collections at Hythe, Folkestone, Dover, Ripon, and Upchurch are examples. About the time of the Reformation there seems to have arisen the horror, which Shakespeare expresses, of disinterring skeletons wholesale and stacking them in vaults. The accidental discovery of this crypt may, I am sure, be repeated in many another old church in England.

Who, for instance, knew that under the market square at Dover was a crypt filled with bones? It was only the fact that a local bank needed enlarged premises which caused the vault of a church, which had never been used since the time of the Reformation, to be opened up.

There are probably some 5,000 or 6,000 individuals represented in the vault at Rothwell, either altogether or in part. These must have been the burials of hundreds of years. I know that a Mr. J. M. Cowper said that the bones belonged to a single generation, but I do not know on what ground he made the assertion, for, as far as I can see, they are in all stages of disintegration. They must have been in the ground for many years before being disinterred, as is shown by the earth in the ear and nose passages, so that I think we are fully justified in regarding them as contemporary with the Hythe bones, and as being the remains of English men, women, and children, most of whom lived in the fourteenth and fifteenth centuries.

GENERAL EXAMINATION OF THE BONES.

The bones at Rothwell differ from those at Hythe in lying in a true crypt some 30 feet long by 15 feet wide. It has a groined roof and only a glimmer of natural light, although it once had two windows in the south wall. At the east end are some faint traces of fresco work, which makes it probable that this crypt was once a chapel. This I believe is the usual history of crypts. The point which strikes the anatomist most in descending into this somewhat dismal place is that it is terribly damp and an extremely bad storehouse for bones. The bones are stacked round three sides of the vault, the surface of the pile being formed largely of femurs laid at right angles to the surface interspersed with skulls. This I notice is the orthodox method of bone stacking, and makes me believe that it was done by no mere modern tyro. The stack varies in height and breadth, but is nowhere as high or broad as that at Hythe, although it is much longer. I know that at Hythe there are the remains of rather over 4,000 people, because when the pile was restacked all the femur heads were counted. I think that this collection contains more than this, partly because the stack is so much longer, partly because the bones are so much more decomposed and have therefore settled more. The effects of damp, the osteologist's worst enemy, are very serious, and are rapidly reducing this interesting and valuable collection to a mass valueless for all scientific purposes.

If the money could be procured the bones should at once be restacked on two or three layers of bricks with air spaces between them, and removed from contact with the outside wall in the same way. This the vicar of Hythe has very wisely had done, but owing to the poverty of Rothwell Church and the absence of a railway station, or large and fashionable holiday resort in the neighbourhood bringing thousands of visitors, as at Hythe, the necessary expense cannot be met, and future anatomists and antiquarians will have to regret the loss of a chance of learning

more of the structure of our forefathers. I am glad that I went to Rothwell when I did, but regret that I did not know of it twenty years ago.

The bad condition of the bones has made my series a small one, and has effaced many of the evidences of pathological and anatomical abnormalities.

Whether the stack contains any collateral evidence like the fourteenth century pottery at Hythe I cannot say until it is turned over, but it would be well worth the while of any scientific society or individual to help with funds for this research.

MEASUREMENTS OF THE CRANIA.

Although the number of individuals of whom there are remains in this crypt is probably greater than that at Hythe, it was with difficulty that I could pick out 100 male and 27 female skulls worth measuring. It must not be argued from this that male remains are more numerous than female. The more delicate structure of the female skeleton accounts for its resisting the effects of damp and pressure less well than the male does, and this is especially the case with the skull. If the remains of femurs, whether they are fit or unfit for measurement, are counted it will be found that females are quite as numerous as males, though measurable male femurs, from their stronger build, are less likely to break in being extricated from the pile of bones, and so there are more of them available for measurement.

The measurements which I have taken are the same as those used for the Hythe skulls, and my experience at Rothwell makes me think the remarks I made on pp. 424 and 425 of the "Report of the Hythe Crania" hold good for these also.

For the convenience of comparison I am including in my tables the measurements of other series which I have already recorded in the Hythe paper, but in this case it seems better to keep all the measurements taken on living people together at the end of the tables, instead of scattering them among the skull measurements as I did in the Hythe Report.

At the end of the paper I am able to give a profile view of the average male Rothwell skull, taken with a craniometer which I have had specially made for the purpose.

In looking at this list one is at once struck by the little difference which there is between the lengths of the male and female skulls at Rothwell. In the other series the difference between the ophryo-maximal length in the two sexes is 5 to 7 mm.; in this it is only 2 mm. Four possibilities occur to me: 1. That the Rothwell women had proportionately longer heads than those elsewhere; 2. That in this small series (27), long-headed women are disproportionately numerous; 3. That in sexing I have included a good many skulls which are really those of men among the women; or 4. *vice versa*. I have looked at these skulls a second time, and such experience as I have makes me still believe them those of women, though I confess that many are in the doubtful category.

TABLE I.—*Length.*

	Males.				Females.			
	Ophryo-Max.		Glabello-Max.		Ophryo-Max.		Glabello.	
	No.	Length.	No.	Length.	No.	Length.	No.	Length.
Rothwell	100	18·4	99	18·6	27	18·2	27	18·2
Hythe... ..	324	17·7	319	17·9	230	17·1	227	17·1
Whitechapel	138	18·7	137	18·9	143	18·0	140	18·0
Moorfields	45	18·7	44	18·9	65	18·2	63	18·3
Christ's Hospital	61	18·3	—	—	—	—	—	—
Upchurch	16	18·2	—	—	5	17·8	—	—
Dover	12	18·3	—	—	—	—	—	—
Bavarian	—	—	100	18·1	—	—	100	17·3
Württemberg	—	—	97	17·9	—	—	19	17·3
French soldiers	—	—	56	18·0	—	—	—	—
Long Barrow... ..	17	18·7	16	19·1	12	18·4	13	18·3
Cambridge Undergraduates	—	—	1000	18·2	—	—	—	—
St. Thomas's Hospl. Students	97	18·1	—	—	—	—	—	—
Women's Medical School Students	—	—	—	—	50	17·5	—	—
Bedford College Students ...	—	—	—	—	—	—	small series.	17·9
British Association	—	—	?	18·7	—	—	?	17·5
English criminals	—	—	3000	18·1	—	—	—	—

Another point is that these skulls approach in length much more closely those which I measured in Christ's Hospital, Upchurch, and Dover than they do the Hythe skulls, which are abnormally short. They are distinctly shorter, however (3 mm.), than the Whitechapel and Moorfields skulls of Dr. Macdonell, but are 3 mm. longer than the average of my 97 St. Thomas's Hospital students. In the glabello-maximal length they were nearly the same as the present day members of the British Association. I lay stress on these facts because I am constantly bearing in mind Dr. Macdonell's suggestion that the English skull is gradually diminishing in length and increasing in breadth; a suggestion which each fresh collection can do a little to substantiate or disprove.

On looking at the first four groups in Table I, it will be seen that the glabello-maximal length is in every case 2 mm. greater than the ophryo-maximal in the male skull, a marked contrast to the 4 mm. which occurs in the long barrow skull.

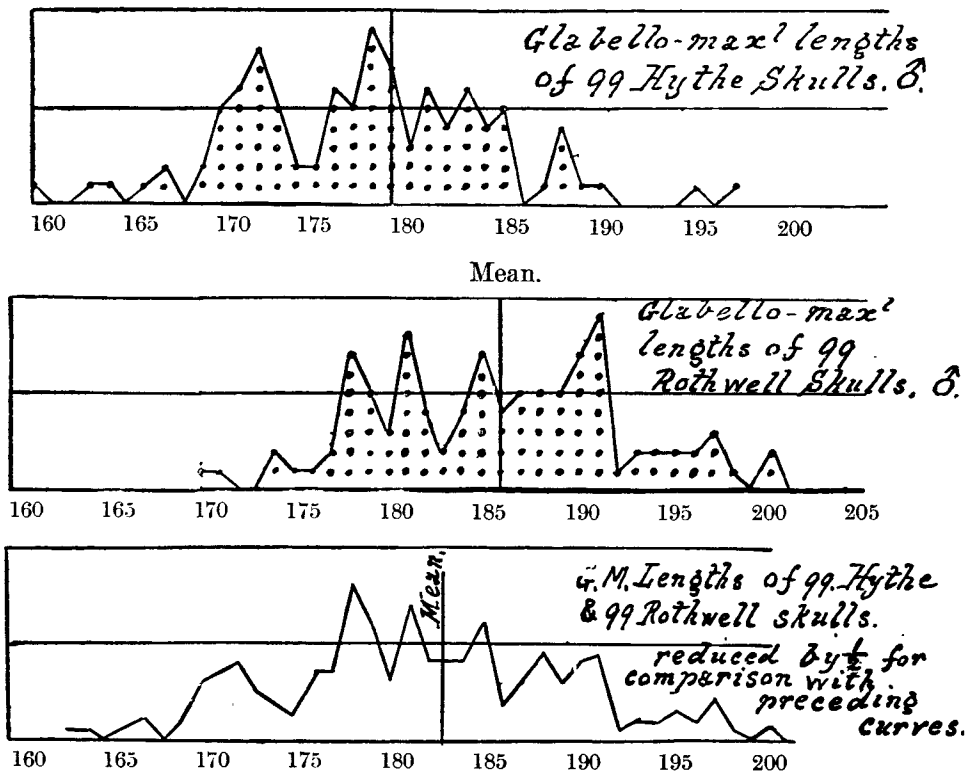
The accompanying curve of the glabello-maximal lengths of the 99 available Rothwell skulls gives an idea of their homogeneity. I have placed a curve of the

first 99 Hythe skulls with it for comparison, and it will be noticed that, although this small number does not give the same tapering pyramid which the whole series of 319 Hythe skulls shows on p. 426 of the Hythe Report, the two curves are very similar in contour since in each case the main mass occupies about 15 mm. It seems probable, therefore, from the facts at our disposal, that the Rothwell collection is just as homogeneous as that at Hythe.

CURVE NO. 1.

Comparison between Glabello-maximal Lengths of 99 Rothwell and 99 Hythe Skulls.

Mean.



The lowest of the three curves is practically the mean of the two upper ones. It is therefore the curve of a heterogeneous series, and it will be noticed that the raised mass, exclusive of the tailing on each side, extends for over 20 mm. instead of 15 or 16 mm. as in the other curves.

From the accompanying table (Table II) it is evident that the Rothwell people had heads of about the same breadth in the parietal region as the modern upper middle class English man and woman, but in their frontal breadth the men seem superior.

There is a difference of 4 mm. in the parietal breadth of the males and females at Rothwell against an average of 5 mm. in six of the other collections.

TABLE II.—*Breadths.*

	Males.				Females.			
	Greatest Parietal.		Least Frontal.		Greatest Parietal.		Least Frontal.	
	No.	Breadth.	No.	Breadth.	No.	Breadth.	No.	Breadth.
Rothwell	100	14·2	96	10·1	27	13·8	27	9·7
Hythe	324	14·3	318	9·1	230	14·0	228	9·6
Whitechapel	135	14·1	132	9·8	140	13·5	147	9·3
Moorfields	46	14·3	47	9·85	62	13·8	64	9·5
Christ's Hospital	61	13·9	—	—	23	13·4	—	—
Upchurch	16	14·4	—	—	5	13·5	—	—
Dover	12	14·3	—	—	—	—	—	—
Bavarian	100	15·0	72	10·4	100	14·4	83	9·6
Württemberg	96	14·8	98	9·7	19	14·3	19	9·4
French soldiers	56	14·3	56	9·6	—	—	—	—
Long Barrow... ..	18	14·2	16	9·9	12	13·9	11	9·4
Cambridge Undergraduates	1,000	14·3	—	—	—	—	—	—
St. Thomas's Hospl. Students	97	14·1	92	9·8	—	—	—	—
Women's Medical School Students	—	—	—	—	50	13·7	50	9·7
Bedford College Women Students	—	—	—	—	Small Series.	13·6	—	—
British Association	?	14·4	—	—	?	13·7	—	—
English criminals	3,000	13·9	—	—	—	—	—	—

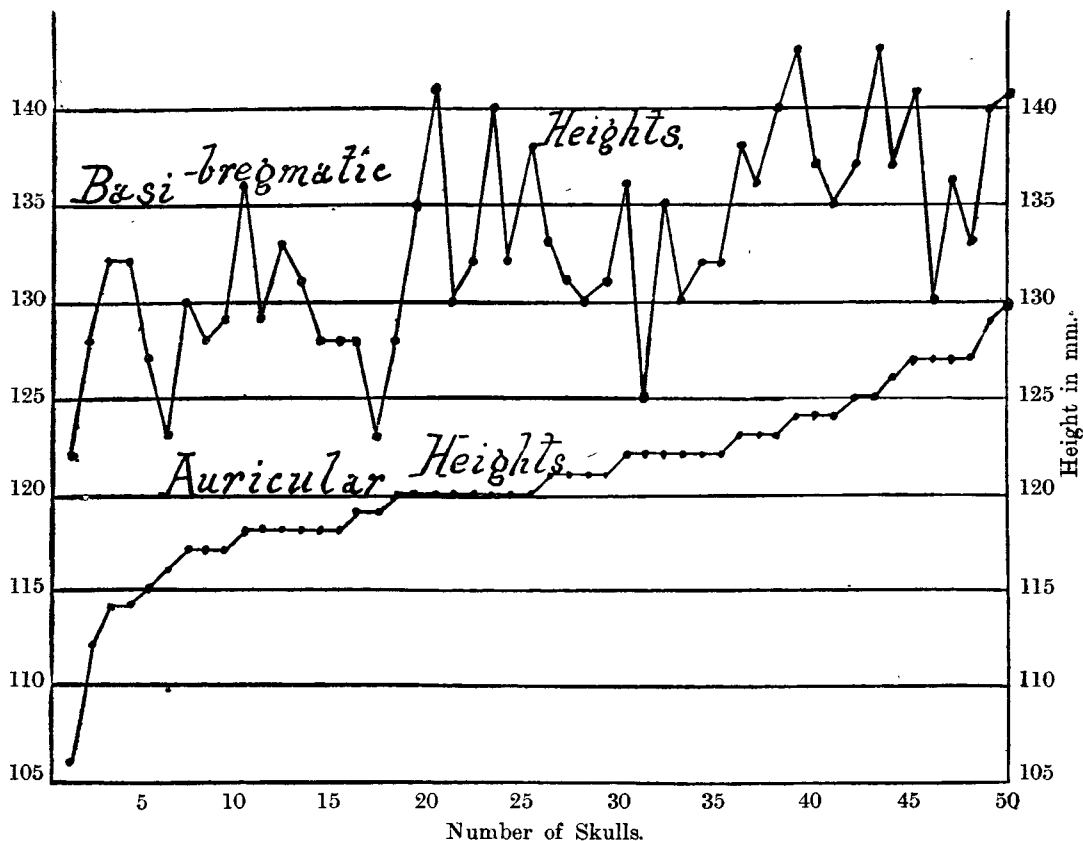
The most striking point in Table III is the identity of the height averages in both males and females of the Hythe and Rothwell skulls. The auricular height is practically the same as in the modern educated English people represented by my two Medical Schools. The difference between the average basi-bregmatic and the auricular height is of course the same in the two collections, and it is considerably less than in the Whitechapel and Moorfields series; indeed the low auricular height of the seventeenth century Londoner seems to me a noteworthy characteristic.

A comparison of the range of variation between the auricular and the basi-bregmatic heights in 50 male Rothwell skulls, taken as they came, quite bears out the lesson which the Hythe skulls taught, *i.e.*, that the variation is enormous and ranges between 3 mm. and 21 mm. Compare curve No. 3 with Curve No. 5 on p. 430 of *Report on Hythe Crania*.

There is a particularly interesting series of eight skulls in curve No. 3, the

auricular height of which is 120 mm., but the basi-bregmatic height varies from 128 mm. to 141 mm.

CURVE NO. 3.



It is important to notice that in height as in breadth the Rothwell skulls which I set aside as female agree with the female Hythe skulls. It therefore seems probable that the Rothwell women have comparatively long heads, or else that the 27 skulls I examined included an undue proportion of long-headed individuals.

INDICES.

In the following table the breadth and height indices of the Rothwell skulls are added to those given in my Hythe Report (p. 431). O.M.L. stands for an index taken with the ophryo-maximal length, G.M.L. for one taken with the glabello-maximal length, while F.P. indicates the relation of the least frontal breadth to the greatest biparietal.

I give these indices though, as I stated in my paper on the Hythe skulls, they mean little to me. I would much rather look at the actual measurements, and, when this is done, I cannot help being struck with the close resemblance between

TABLE IV.—*Indices.*

	Males.					Females.				
	Breadth.			Height.		Breadth.			Height.	
	O.M.L.	G.M.L.	F.P.	O.M.L.	G.M.L.	O.M.L.	G.M.L.	F.P.	O.M.L.	G.M.L.
Rothwell	772	763	711	720	712	758	758	703	703	703
Hythe	808	799	692	751	743	819	819	686	749	749
Whitechapel	754	743	695	706	698	750	750	689	694	694
Moorfields	765	756	688	695	688	758	754	688	681	678
Christ's Hospital	760	—	—	—	—	—	—	—	—	—
Upchurch	791	—	—	725	—	758	—	—	—	—
Dover	781	—	—	710	—	—	—	—	—	—
Bavarian	—	832	693	—	740	—	832	666	—	740
Württemberg	—	824	655	—	732	—	827	657	—	728
French soldiers	—	798	671	—	728	—	—	—	—	—
Long Barrow	759	743	697	738	723	755	760	676	734	738
Cambridge undergraduates	—	783	—	—	—	—	—	—	—	—
St. Thomas's Hospital students	779	—	695	—	—	—	—	—	—	—
Women medical students ...	—	—	—	—	—	783	—	708	—	—
Bedford College students ...	—	—	—	—	—	—	760	—	—	—
British Association	—	770	—	—	—	—	783	—	—	—
English criminals	—	772	—	—	—	—	—	—	—	—

the Rothwell crania and those of my own students at St. Thomas' Hospital, save for the fact that the Rothwell men had broader foreheads.

TABLE NO. V.

	Ophyro Maximal length.	Parietal Breadth.	Frontal Breadth.	Auricular Height.
Rothwell	184	142	101	120
St. Thomas's Hospital	181	141	98	121

The 97 students from whom these measurements were obtained were mostly of English parentage, though there was a small admixture of Celtic blood. As they averaged about 21 years of age, their skulls had not reached their full size, while, judging from the condition of the sutures, the Rothwell men must have averaged 35 to 40 years at their death, so that their skulls were fully grown. Against this, however, must be set the fact that the St. Thomas's students averaged exactly 5 feet 9 ins. in height, while the Rothwell men, judging from the measurements of 65 femurs, no two of which belonged to the same body, were only 5 feet 6 inches high. In my ignorance of the exact effect of age and height upon skull measurements I propose to let these two factors cancel one another, and then we are left with the fact that the mediæval Rothwell man had a slightly larger head in everything but height than the modern St. Thomas's student. It is true that Dr. Gladstone gives a valuable table (*see Biometrika*, vol. iv, June, 1905, p. 116), showing the variation in the head measurements with the height of the individual, but until I know the corresponding variation for age this only solves half my difficulty.

In this paper Dr. Gladstone states that he found that the usual allowance of 11 mm. for soft parts is too much, and gives 8·47 mm. deduction for the length and 8·27 for the breadth of males between 20 and 48 years. This is nearer my own experience, though I hope to go into the matter more fully when time allows.

I cannot accept Dr. Gladstone's allowance of 4·05 mm. for the difference in height between the skull and the head with the scalp on, since all he did, apparently, was to reflect the scalp between taking the two measurements, leaving the skin in the upper part of the external auditory meatus unaccounted for. If this were measured it would probably make the allowance for the height about the same as that for the length and breadth.

When this discrepancy is cleared up, I expect we shall find Dr. Gladstone's allowance a juster one than the 11 mm. we have been in the habit of using, and if I had used this it would have made my St. Thomas's Hospital students' heads a trifle larger than those of the Rothwell men.

The forehead breadth, however, is unaffected, since I have always refused to allow more than 6 mm. (3 mm. on each side) for the soft parts here.

If we can accept, and I do not see why we should not, these medical students as typical of the well-nourished and educated classes of young Englishmen, we find that their heads only differ from those of the mediæval inhabitants of Rothwell in being rather narrower across the forehead, and rather higher.

We cannot, however, bear too carefully in mind the fact that these comparisons are based on a very few diameters. Later on, I hope to show how important it is for us to be able to record a diagram of the average contour of a series of skulls, since two skulls of the same length, breadth, and height may differ immensely in shape.

In any case the record of these Rothwell crania lends no countenance to the theory that our skulls are becoming shorter and broader with the lapse of centuries.

It may be worth while to compare the heads of the Rothwell women with those of the present day students at the London Medical School for Women, though in doing so I bear in mind the small number of female skulls I could find undamaged enough to measure at Rothwell. There were only 27 of these, but in analysing blocks of 25 skulls from my large series at Hythe, I find the risk of variation from the mean of the whole of them hardly ever exceeds 2 mm.

TABLE NO. VI.

	Ophyro Maximal Length.	Parietal Breadth.	Frontal Breadth.	Auricular Height.
Rothwell	18·2	13·8	9·7	11·6
School of Medicine for Women...	17·5	13·7	9·7	11·7

Here again the deduction of 11 mm. for the soft parts from the length, parietal breadth, and auricular height, is probably doing an injustice to the modern women, though the frontal breadth is likely to be correct, for only 6 mm. was deducted from that. Here there are nearly the same allowances to be made as in the male skulls. The students were younger than the Rothwell women, while they were $2\frac{1}{2}$ inches taller, for, after measuring 38 female femurs, no two of which belonged to the same individual, I estimated the Rothwell women at 5 feet 2 inches, while the 50 students measured 5 feet $4\frac{1}{2}$ inches.

The length of the female Rothwell head I have already discussed, and believe it to depend either on an exceptional run of long female heads in a small series, or else that it was a peculiarity of the women of Rothwell which was not shared with the men.

In both the male and female students the auricular height is 1 mm. greater

than that of the Rothwell heads, and when we come to measure the soft parts more exactly it is probable that we shall find that 2 or 3 mm. less will have to be deducted from the living head. It may be that this increase of height is the result of my using for comparison people who have received and were capable of receiving higher intellectual training than the average modern Englishman or Englishwoman.

Taken as a whole I think it may be said that the Rothwell skull is a good type and remarkably like that of a modern English person.

VARIATIONS IN SUTURES, FORM, ETC.

Bathrocephaly.

A bulging in the occipital region occurred in 8 per cent. of the male skulls, which is the same proportion as at Hythe. I did not find it in any of the 27 female skulls I examined.

Scaphocephaly.

Four per cent. of the male skulls showed slight scaphocephaly, but it was not seen in any of the females. If scaphocephaly is to be regarded as a sign of a degraded type of skull it is worth noting that at Rothwell it was less frequently present and less marked in degree than at Hythe.

Plagiocephaly.

I met with no examples of this.

Metopism.

There were four cases of persistence of the metopic suture in the male skulls and one in the female, *i.e.*, 4 per cent. in each sex. In the four males the average least frontal breadth is 10·5 cm. against 10·1 cm. for the whole of the male skulls; while the female has a breadth of 10·2 cm. against the average of 9·7 cm.

Of course nothing can be deduced from the single female specimen, but the four metopic males show an average increase of 4 mm. in forehead breadth as a result of their abnormality. The Hythe metopic skulls showed an average increase of 6 mm., the Whitechapel only 2 to 3 mm.

Post-coronal Depression.

This is evidently a much more common abnormality than in the Hythe skulls, for I found four examples in the 100 men, and one among the 27 women; still it is not nearly so frequent as it was among the Whitechapel crania.

Obelionic Depression.

Most collections of skulls of a homogeneous nature show some predominating abnormality. In Dr. Macdonell's Whitechapel series it was a post-coronal depres-

sion or constriction; in these Rothwell skulls it is an antero-posterior depression or gutter in the region of the obelion between the parietal foramina. It was found ten times in the 127 skulls examined, and though I do not remember to have noticed it in other skulls, possibly because my attention has never been called to it, I expect that it is connected in some way with the early synostosis of the sagittal suture at this point. The chief difficulty in connecting it with this suture is, of course, the fact that early closure of it is said to give rise to exactly the opposite condition, namely, scaphocephaly or antero-posterior elevation of the mid-line of the skull, so that for the present I shall be content to put my observation on record and wait.

Pterion and Epipteric Bones.

Unfortunately so many of the skulls were damaged or synostosed in this region that I have no satisfactory record of epipteric bones. I specially examined, however, 56 male and 16 female skulls in which the pterion was perfect on both sides. In the 56 males I found five examples of epipteric bones (two on both sides, two on the left only, and one on the right only). In the 16 females there were two examples, one on the right and one on the left.

In one male skull (No. 64) I found the simian arrangement of a fronto-squamous instead of the usual parieto-spheroid suture at the pterion. It certainly was the only case I noticed in the 200 skulls or pieces of skulls I must have looked at. Judging from its absence in 500 Hythe skulls it is probably quite a rare abnormality.

ROTHWELL MALE SKULLS.

Number.	Glabello Maximal Length.	Ophryo Maximal Length.	Parietal Breadth.	Frontal Breadth.	Basibregmatic Height.	Auricular Height.	
1	181	180	145	100	138	123	Asterion ossicle.
2	185	186 ?	147	106	—	—	Bathrocephalic.
3	191	192	142	107	128	120	„
4	182	182	146	106	135	120	
5	186	186	145	95	128	118	Antero-posterior depression near obelion.
6	190	189	140	100	141	120	
7	190	189	149	106 ?	136	122	
8	205	203	145	100 ?	140	129	Os bregma.
9	181	177	144	100	—	130	
10	187	184	147	—	—	128	Bathrocephalic.

¹ A ? here means that the sex is doubtful.

Number.	Glabello Maxi- mal Length.	Ophryo Maxi- mal Length.	Parietal Breadth.	Frontal Breadth.	Basal-bregmatic Height.	Auricular Height.	
11	178	177	146	102	136	123	
12	181	181	139	100	125	122	
13	179	173	143	98	130	117	
14	187	185	143	102	135	122	Antero-posterior depression near obelion.
15	180	178	127	98	130	120	
16	198	196	138	99	128	118	
17	187	185	142	106	141	127	Os bregmæ.
18	190	189	127	97	122	106	
19	191	189	143	101	133	121	Bathrocephalic.
20	181	180	153	103	137	126	Outer part of interparieto-occipital fissure patent.
21	197	195	147	108	130	122	
22	180	179	134	94	128	119	
23	193	190	147	108	132	120	
24	185	184	135	100	123	116	
25	191	182	133	96	131	121	
26	193	186	145	103	132	122	
27	191	191	149	96	131	118	
28	197	197	147	108	132	122	Antero-posterior depression near obelion.
29	181	179	155	97	140	123	Antero-posterior depression near obelion. Slightly bathrocephalic.
30	182	182	138	95	133	118	
31	187	185	140	101	128	117	
32	? 189	184	143	96	140	120	
33	191	189	143	103	137	125	
34	185	183	140	99	129	118	
35	179	175	139	101	132	120	
36	191	189	137	104	130	121	Slight post-coronal constriction.
37	195	193	140	98	130	127	
38	197	194	147	109	143	125	
39	188	187	133	99	127	115	Slightly scaphocephalic.
40	185	181	137	103	123	119	Bathrocephalic.
41	191	188	138	100	143	124	Slightly scaphocephalic.
42	185	198	134	92	132	114	
¹ 43	177	180	150	106	137	124	Metopic.
44	188	185	140	—	129	117	Post-coronal constriction. Slightly bathrocephalic.
45	181	178	136	94	128	112	

¹ A ? here means that the sex is doubtful.

Number.	Glabello Maxi- mal Length.	Ophryo Maxi- mal Length.	Parietal Breadth.	Frontal Breadth.	Basal-bregmatic Height.	Auricular Height.	
? 46	176	177	151	96	131	121	
47	190	185	138	101	138	120	Slightly bathrocephalic.
48	192	188	135	99	135	124	
49	171	165	133	99	132	114	
50	185	182	150	96	136 ?	118	
51	184	184	144	103	135	122	
52	190	187	133	99	130	118	
53	183	182	135	101	133	118	
54	184	181	136	98	137	122	
55	200	197	140	106	136	127	
56	200	198	145	108	141	125	
57	180	178	153 ?	92	129	116	Bathrocephalic.
58	194	194	146	107	141	126	Slightly scaphocephalic.
59	178	176	146	92	—	118	
60	181	180	135	93	118	104	
61	182	180	151	105	137	120	Metopic.
62	178	175	136	100	125	115	
63	188	187	142	105	126	123	
64	184	184	144	107	141	122	Fronto-squamous suture at pterion on both sides.
65	177	175	145	110	140	122	Metopic. Coronal constriction.
66	196	191	140	106	130	122	
67	184	181	134	100	135	116	
68	194	190	145	102	133	117	
69	190	190	143	99	135	119	
70	189	187	144	104	129	122	
71	179	178	144	—	132	117	
72	181	179	143	103	124	116	Slightly scaphocephalic.
? 73	188	188	140	95	130	117	
74	189	186	141	103	132	121	
75	178	176	140	91	129	115	
76	187	186	135	100	138	129	
77	182	178	147	107	145	127	
78	179	178	147	98	129	119	
79	174	174	141	99	125	114	Metopic.
80	178	178	140	100	133	117	
81	183	182	138	97	132	118	
82	196	193	150	100	132 ?	117	
83	191	192	143	100	128	123	

Number.	Glabello Maxi- mal Length.	Ophryo Maxi- mal Length.	Parietal Breadth.	Frontal Breadth.	Basi-bregmatic Height.	Auricular Height.	
84	175	172	141	105	—	113	
85	191	190	139	108	132	118	
86	179	179	141	104	127	115	Antero-posterior depression at obelion.
87	189	189	148	102	—	122	" " " "
88	178	179	139	101	128	118	
89	195	193	147	100	141	130	Markedly bathrocephalic.
90	178	176	144	100	135	124	
91	174	172	139	94	—	123	
92	189	190	145	96	132	118	
93	190	184	140	95	138	120	
? 94	170	168	134	97	122	107	
95	186	180	146	106	135	128	
96	186	185	145	100	132	122	
97	186	186	137	97	137	125	
98	—	178	145	—	128	119	
99	188	186	143	106	133	127	
100	185	182	143	105	127	118	Coronal constriction.

FEMALE SKULLS.

Number.	Glabello Maxi- mal Length.	Ophryo Maxi- mal Length.	Parietal Breadth.	Frontal Breadth.	Basi-bregmatic Height.	Auricular Height.	
1	189	188	138	92	130	118	
2	174	175	132	89	116	110	
3	185	184	132	96	128	113	
4	187	188	140	92	122	112	Coronal constriction. Marked antero- posterior depression at obelion.
? 5	188	188	134	99	128	117	
? 6	183	182	146	95	130	115	
7	190	188	135	94	129	117	Interparieto-occipital fissure for 1 inch from left asterion.
8	183	181	137	96	133	114	
9	181	181	140	95	123	113	
10	185	186	142	100	126	118	

Number.	Glabello Maxi- mal Length	Ophryo Maxi- mal Length.	Parietal Breadth.	Frontal Breadth.	Basi-bregmatic Height.	Auricular Height.	
11	175	176	141	98	130	117	
12	178	177	140	94	141	122	
13	177	176	128	90	130	107	
14	181	182	140	104	130	121	Antero-posterior depression at obelion.
? 15	184	182	142	98	123	114	Slight depression at obelion.
? 16	183	184	143	99	135 ?	117	
? 17	192	191	139	98	125	114	
18	169	171	140	103	127	117	Antero-posterior depression at obelion.
19	181	181	144	100	128	115	
20	186	185	140	102	130	117	
21	183	182	138	98	132	121	
22	181	184	133	94	—	114	
23	176	174	137	102	126	117	Metopic suture open in lower half.
? 24	180	179	144	97	129	120	Slight antero-posterior depression at obelion.
25	178	177	140	96	130	119	
26	181	181	142	95	127	114	
27	180	179	126	99	130	115	

TYPICAL PROFILE VIEW OF ROTHWELL SKULLS.

With a specially-designed craniometer it is possible to take a series of measurements from the external auditory meatus to various points in the mid-line of the skull, ranging from the incisor point in front to the inion behind.

At the same time, the angle which the direction of each of these points makes with a vertical line can be noted. There is a special arrangement which ensures that a line passing from the external auditory meatus to the lower margin of the orbit is horizontal, *i.e.*, corresponds to 90° of the protractor's scale.

By taking an average of all the measurements and all the angles, it is possible to construct an arithmetical mean of any number of skulls examined. This is not exactly the same as a graphic mean, such as might be obtained by putting the profile of two skulls on to the same sheet of paper, taking care that all the angles correspond, and then drawing a contour midway between the two. It is, however, I find, so nearly the same thing that the thickness of the line of a J pen is enough to obliterate the difference between them.

The accompanying diagram shows the average contour and measurements of thirty male crania from Rothwell. When compared with similar diagrams of other collections it will probably be found of much greater value than mere statements of length and height measurements. (See p. 503.)

In estimating the value of a mean it is important to have some idea of how the material from which it is derived is grouped. Mathematicians convey this information by working out the standard deviation and coefficient of variation, but what the anthropologist wants to know is whether he is working with a homogeneous collection or with one in which very great ranges occur. On what characteristic are we to depend in estimating the degree of homogeneity of a group of skulls? If two or more sets of measurements are taken conflicting results may be obtained, as is exemplified in the curves of length and breadth which I have plotted out on pp. 488 and 490 for Hythe and Rothwell skulls. If the length curve is considered the Rothwell crania are more homogeneous than those of Hythe, but when the breadth curve is taken into account the Hythe skulls are the more homogeneous of the two.

I would strongly protest against the use of any index alone in determining homogeneity, because a mixture of pygmy and gigantic skulls might all have nearly the same index and so be classed as homogeneous.

I fear that the homogeneity of such complex things as skulls will never be able to be estimated mathematically. All we can do is to see where any particular group differs markedly from those found in the same country and then to consider the deviation of this particular measurement from the mean.

Applying this to some of the collections in which I am interested I should estimate the homogeneity of the Hythe crania by their length because they are peculiarly short skulls. In Dr. Macdonell's Whitechapel series, on the other hand, the striking characteristic is lowness, and I should estimate their homogeneity in terms of their height. In series where one can point to no special characteristic I suppose that the length will give as good a clue as any other measurement.

Here at Rothwell the most striking characteristic is broadness of the forehead, and in the accompanying curve of forehead breadths it will be noticed that the series seems most homogeneous, and this information is quite in harmony with what the curves of length have already graphically shown (see p. 488).

CURVE No. 4.

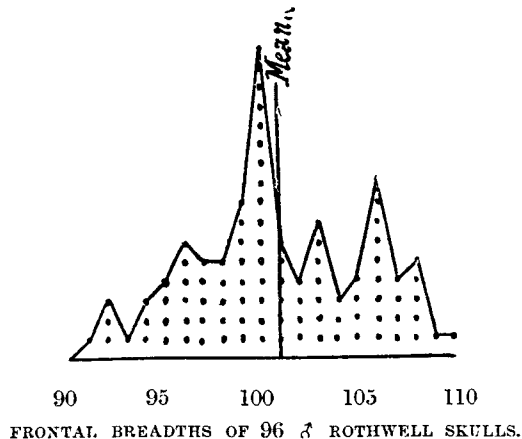


TABLE NO. VII.

Angles and measurements in millimetres from the external auditory meatus to various points in the sagittal plane of the skull. Taken from 30 male Rothwell skulls.

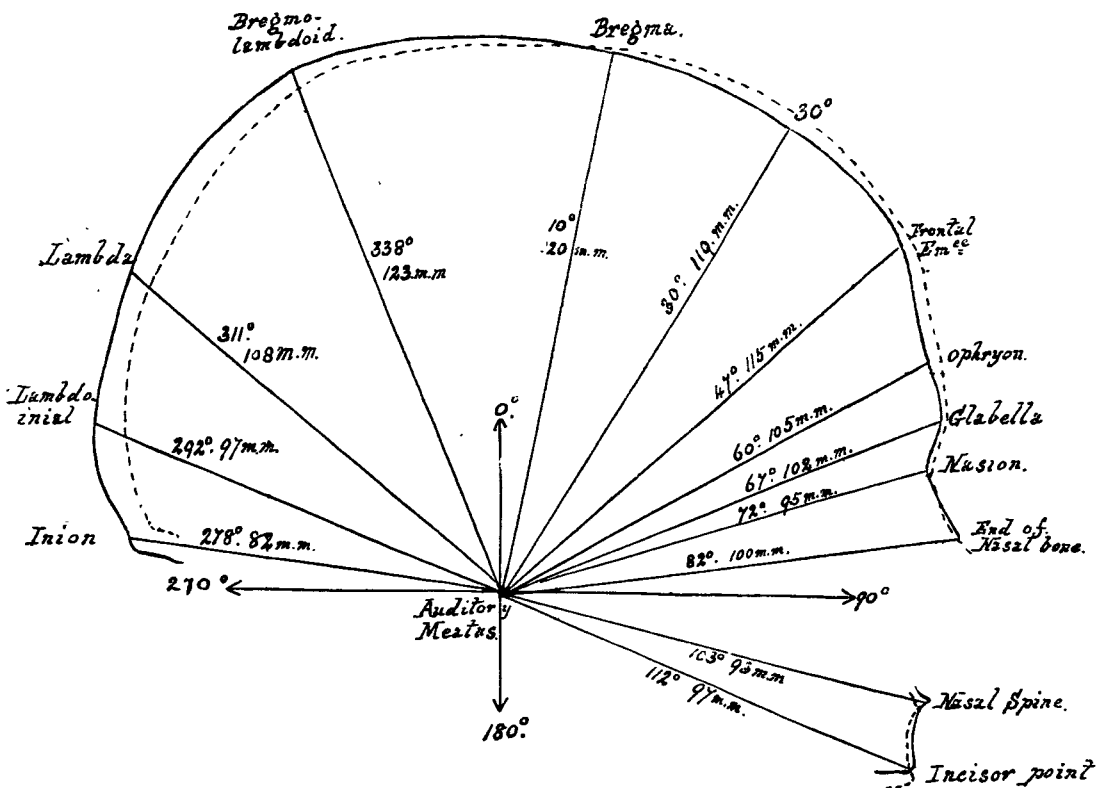
	Incisor Point.	Nasal Spine.	End of Nasal Bone.	Nasion.	Glabella.	Ophryon.	Frontal Eminence.	Angle of 30°.	Bregma.	Bregmo-lambdoid.	Lambda.	Lambdo-inial.	Inion.
	Angle Distanc.	A.	D.	A.	D.	A.	D.	A.	D.	A.	D.	A.	D.
1	110°-95	100°-87	85°-104	70°-102	67°-108	60°-112	50°-124	130	12°-129	343°-125	31°-106	291°-98	278°-84
2	111°-98	100°-93	80°-97	73°-98	68°-105	63°-108	52°-116	116	14°-116	342°-118	310°-105	293°-95	275°-81
3	—	—	84°-95	70°-84	64°-91	56°-95	43°-107	113	12°-122	340°-117	307°-103	295°-96	273°-85
4	—	98°-96	—	71°-96	65°-100	58°-103	42°-113	115	6°-115	340°-119	312°-107	—	270°-78
5	—	—	82°-98	68°-91	64°-97	59°-101	48°-112	117	4°-116	333°-118	305°-103	290°-93	273°-82
6	—	102°-95	—	75°-90	68°-100	60°-105	48°-116	118	10°-118	335°-123	315°-111	290°-97	275°-81
7	116°-90	101°-84	80°-93	67°-89	60°-95	55°-98	42°-105	106	1°-113	330°-119	305°-108	289°-97	273°-83
8	—	—	85°-101	75°-94	66°-109	60°-112	47°-116	120	12°-122	342°-129	316°-111	298°-100	275°-78
9	115°-103	105°-95	85°-111	74°-103	69°-105	62°-108	78°-122	125	10°-126	335°-123	310°-115	285°-104	272°-88
10	—	—	85°-103	73°-97	68°-103	63°-106	48°-118	124	13°-127	340°-133	307°-109	288°-95	273°-82
11	110°-103	104°-97	80°-103	74°-96	68°-103	61°-108	50°-117	121	10°-120	335°-124	310°-114	292°-103	275°-83
12	110°-106	102°-100	85°-108	75°-96	68°-104	60°-105	48°-120	125	13°-126	336°-129	304°-114	296°-102	282°-90
13	—	—	80°-98	75°-92	69°-99	61°-100	45°-114	117	6°-120	333°-123	307°-108	288°-98	270°-82
14	109°-95	105°-92	80°-98	75°-98	70°-104	62°-105	47°-113	118	15°-114	348°-116	322°-101	295°-93	289°-74
15	113°-100	104°-93	—	76°-97	72°-105	65°-107	50°-119	125	11°-119	343°-122	314°-102	292°-86	280°-78
16	116°-102	105°-94	85°-100	76°-97	70°-99	63°-104	45°-117	124	16°-127	345°-130	325°-103	297°-90	285°-81
17	—	—	—	75°-93	66°-101	57°-105	45°-116	122	10°-122	346°-125	310°-105	295°-92	283°-79
18	111°-98	104°-91	80°-97	73°-95	67°-103	60°-106	45°-118	121	7°-122	330°-118	310°-107	290°-95	273°-83
19	—	106°-99	80°-101	72°-97	67°-105	58°-108	45°-115	118	10°-117	340°-122	310°-110	292°-106	276°-86
20	112°-92	104°-87	80°-94	73°-92	67°-98	60°-102	45°-118	121	10°-122	335°-122	310°-110	289°-98	276°-83
21	113°-97	102°-92	78°-100	70°-100	66°-107	55°-110	45°-122	123	5°-119	332°-120	305°-110	284°-102	269°-87
22	110°-100	102°-91	79°-98	71°-96	67°-103	60°-106	45°-118	121	10°-124	335°-121	310°-102	287°-90	273°-78
23	112°-97	104°-94	81°-104	75°-96	67°-104	60°-106	48°-111	113	6°-118	335°-122	310°-107	290°-94	280°-84
24	111°-99	104°-95	84°-106	70°-99	68°-105	61°-107	46°-118	—	7°-122	335°-124	315°-118	298°-111	276°-82
25	112°-109	102°-100	82°-105	73°-102	68°-108	60°-112	48°-121	127	7°-126	335°-128	312°-120	294°-109	276°-89
26	112°-94	106°-92	82°-98	72°-90	67°-97	61°-101	50°-110	118	11°-119	335°-127	310°-114	285°-93	268°-78
27	—	105°-98	82°-103	72°-102	69°-107	62°-108	50°-114	115	15°-117	343°-119	313°-104	297°-95	278°-77
28	112°-93	105°-89	83°-97	71°-91	65°-97	58°-100	45°-108	109	7°-108	338°-114	307°-100	290°-87	273°-71
29	118°-95	105°-91	80°-95	73°-95	70°-102	65°-106	50°-120	123	15°-122	343°-126	320°-105	295°-90	281°-78
30	111°-93	103°-91	79°-99	69°-96	64°-101	56°-104	45°-115	119	10°-119	339°-123	305°-108	295°-98	279°-81

In taking these measurements I have tried to follow the orthodox methods, but one or two words of explanation are necessary.

The *incisor point* is the place where I find the greatest measurement on the ridge separating the sockets of the two central upper incisor teeth.

The *nasal spine* is not the apex of that projection, but a point at its base level with the lower margin of the nasal aperture.

The *end of the nasal bone* was the farthest measurement I could get along this bone, whether it was broken or not. As a matter of fact, it generally was broken in these skulls, so that the point mapped out indicates the angle and direction of the nasal bones, though not their full length.



SAGITTAL CONTOUR OF 30 ♂ ROTHWELL CRANIA (CONTINUOUS LINE) CONTRASTED WITH 80 ♂ HYTHE CRANIA (DOTTED LINE).

The *bregmo-lambdoid* measurement was taken to a point as nearly as I could judge half-way between the bregma and lambda. As the angle in each case is given, it matters little whether the point was really half-way or not. Since taking these measurements I have decided to take a fixed angle of 340° for this measurement, and in this way to have two fixed angles, one of 30° and the other of 340° interpolated among the variable ones.

It may be remarked that the points of measurements on the top of the skull are quite far apart, but if the table of measurements is looked at it will be seen that from 30° backward through the bregma to 340° the measurements vary very

little ; in other words, the top of the skull forms nearly an arc of a circle, the centre of which is the auditory meatus.

The *lambda-inial* measurement is the approximate mid-point between the lambda and inion. It is usually very close to the point which the craniometer touches in taking the glabello-maximal or ophryo-maximal length.

The *inion* is not necessarily the tip of the external occipital protuberance, which often projects downward considerably, but a point where the two superior curved lines would cross the sagittal plane.

The special craniometer is described and illustrated in the *Journal of Anatomy*, vol. 44, 1909–10, p. 396.

THE PHYSICAL CHARACTERS OF THE NUBA OF KORDOFAN.

By C. G. SELIGMANN, M.D.

[WITH PLATES XXXII-XXXVI.]

THE measurements set forth in this paper were collected in the spring of this year (1910), in Southern Kordofan, during the progress of the ethnographical investigations recently initiated by the Government of the Anglo-Egyptian Sudan.

A short account of the ethnography of the Nuba tribes of that part of Southern Kordofan visited will be published later, so that here I shall only give a few facts dealing with those characteristics of the Southern Nuba, and of their country, which may be thought to have exerted some influence on their physical development.

Southern Kordofan consists of a flat plain dotted with a considerable number of rugged hills, the highest of which reach to about 3,000 feet. The hills rise abruptly from the plain, sometimes forming considerable masses, such as Jebel Eliri and the hills in the neighbourhood of Talodi, sometimes as isolated masses of rock constituting a single hill as Jebel Amira. To the east Dar Nuba is bounded by the narrow fringe of Shilluk territory on the west bank of the White Nile, to the south by Lake No and the Bahr-el-Ghazal, and to the west by Dar Homr and Darfur. To the north its limits are roughly indicated by a line running from latitude 12° N. on the Darfur frontier to latitude 13° N. on the White Nile. Northern Kordofan has long been subject to Arab influence, but in the south of Dar Nuba the Nuba, though raided for cattle and slaves, have managed to retain their independence, and even under Dervish rule the Emirs sent against the Nuba did little more than reduce the more exposed hills as far south as Dilling, in some cases carrying off almost the whole population.

The inhabitants of some of the northern hills, such as Tagale, profess Islam, while even some reputed pagan hills, as Dilling, have come under Muslim influence. In the south, round the base of some of the hills, such as Jebel Eliri, there are settlements of a mixed type of Arabic-speaking blacks, who call themselves Arabs, but are really the descendants of slaves who revolted and fled from

vigour and enterprise, and except in the case of some of the smaller and weaker Nuba communities, where intermarriage has taken place, they have exerted little influence on the Nuba. Their physique in no way resembles that of the Nuba; they are smaller and slighter, while their skin colour is often lighter. Many of them have adopted the rather characteristic method of doing their hair, illustrated in Plate XXXII, Fig. 1, which also gives a fair idea of the physical appearance of these negroids.

One of the most remarkable features of Dar Nuba is the multiplicity of languages spoken within its bounds. The inhabitants of neighbouring hills only a few miles apart may speak languages mutually unintelligible and even on the same *massif*—when this is of moderate size—there may be two or three communities speaking different languages and coming little in contact one with another, though their habits, customs and beliefs are fundamentally the same.

A good example of the prevailing condition is offered by Jebel Eliri. The Eliri, said to be the original inhabitants of this *jebel*, have been forced to cede the best part of it to the Lafofa, who came from the neighbouring Jebel Tekeim. The Eliri have mixed with the "Arabs" below to some extent, and now only inhabit a small village high up on the *jebel*, a few houses close to the Lafofa village and a settlement at the base of the hill. A few Eliri men speak the Lafofa dialect, though none of the latter people profess to understand the Eliri dialect, and only two or three mixed marriages are recorded.

On the same *jebel*, about six miles to the west, is Talassa, where the Tumtum dialect is spoken. The foundation of this settlement appears to have been due to a party of settlers from Jebel Korongo; these were joined by refugees from various northern hills which had been attacked by the Dervishes. These folk on settling on Jebel Eliri adopted the Korongo dialect. The men of Talassa wear linen jibbas like the Arabs and the so-called Arab inhabitants of the plains; like the latter they are inhospitable, and their houses are dirty and ill-kept.

It does not appear that any recent physical, cultural or linguistic influence has been exerted on the Southern Nuba by the Shilluk, whose villages form a line along the White Nile to the S.E. of Dar Nuba, nor by the Dinka and Nuer to the south. These Nilotics have, until the last few years, had nothing to do with the Nuba, indeed between them and the hills there is everywhere a belt some 20 miles broad of uninhabited country, waterless in the dry season and inundated during the rains.

Measurements were taken of thirty-two males and eleven females living on Jebel Eliri, all of these being from the neighbouring settlements of Lafofa and Eliri. Three men from Jebel Talodi (lying between 40 and 50 miles to the north of Jebel Eliri) or its immediate vicinity were also measured, as were eight from Jebel Lumun and seven from the neighbouring hills of Tira Akhdar (called on map Tira El Akhdar), Tira Mandi and Kanderma. The last four *jibal* constitute a little known group lying 30 to 40 miles to the north-east of Talodi, Tira Akhdar, Tira Mandi and Kanderma, speaking the same dialect. The Nuba, though shorter

than the Shilluk and Dinka, are certainly taller than the members of the majority of Sudani tribes. The average of thirty-two men belonging to the Lafofa and Eliri communities of Jebel Eliri was 1·73 m. (about 68 inches), the minimum being 1·64 m. and the maximum 1·90 m., the last measurement being given by a youth (No. 15) judged to be about twenty, and who certainly had not attained to his full physical development to judge from the appearance of his slightly older comrades. Ignoring this youth who was 72 mm. taller than the tallest of his comrades, the average height of thirty-one male Lafofa and Eliri works out at 1·72 m. Making this correction the average height of twenty-one Lafofa and ten Eliri men is so nearly the same (1723 mm. and 1727 mm. respectively) that the slight difference may be disregarded. Turning now to the group of seven men (Nos. 116–122) from Tira Akhdar, Tira Mandi, Kanderma and Kawama, the average height of these men is 1·70 (min. 1·66 m., max. 1·77 m.), that of four men from Jebel Lumun is 1·72 m., while three men from Tasumi and Talodi average 1·70 m.

The average height of eleven Nuba women of Lafofa and Eliri is 1·57 m., the extremes being 1·47 m. and 1·66 m.

The Nuba are among the darkest skinned tribes of the Sudan, the colour of their skin varying from a dark chocolate brown to the darkest shade of brown black: I have seen two women, said to be Nuba, with lighter coloured skins than this statement warrants, but I did not have the opportunity of inquiring into their history.

The Nuba are not a hairy race, the men have little or no body hair, save that on the pubes and the axillae, and the hair on the face is scant, though the older men not uncommonly grow a slight beard and moustache. The hair of the scalp is of the common negro type; many of the men shave the head; women do not appear to do this. Grey hair is common in the old. The photograph reproduced on Plate XXXIII (Fig. 1) shows the general physical development of the Nuba, yet this hardly indicates the muscular efficiency of this people. The first part of the ascent of Jebel Eliri necessitates a tolerably stiff climb, the greater part of which is a scramble over a mass of irregularly piled and often slippery boulders, yet it is no exaggeration to say that the Nuba who carried our baggage up to Lafofa fairly ran up the hill with their burdens, the majority of which weighed from 30 to 40 lbs.

The weight of the majority of adult men on Jebel Eliri varied from 140 to 150 lbs., a few weighed more and some less, the average weight of twelve men judged to be between twenty-five and fifty being 145 lbs. The physique of the best developed of the Nuba may be judged from Fig. 1 of Plate XXXIV, which represents two men from one of the villages on Jebel Talodi who are champions in the wrestling bouts which are periodically held on Talodi and the neighbouring *jibal*. The weight of these two men would probably be well over 150 lbs. The finest of the Lafofa men (No. 33), who in physique resembled these two, weighed over 160 lbs.—the limit of my weighing machine—and stood 1·74 m. I weighed only

seven women of Eliri and Lafofa; three of these (Nos. 20, 21, and 39) were shrivelled and senile, the remaining four women weighed from 108 to 137 lbs. and gave an average of about 120 lbs. The average cephalic index of thirty-two Lafofa and Eliri men is 76.42, the median of the seriated indices being 77.45. On seriating the cephalic indices of the Eliri and Lafofa separately there is a difference of nearly two units in the average index, that for Lafofa (22) being 77 and that for Eliri (10) being 75.15. Neither of these figures corresponding closely with the median of the series from which it is derived, the median of the Lafofa being 78.4 and that of the Eliri 76.5. Individuals showing a high degree of dolichocephaly occur in both groups, one Eliri man (No. 6) having a cephalic index of 64 and two Lafofa indices of 67.35 and 67.38 respectively. Five Lafofa are brachycephalic with indices of 80 or over, and two others had indices over 79; on the other hand, no Eliri man had an index above this figure. Turning to the Tira Akhdar, Tira Mandi, Kanderma and Kawama group (comprising seven individuals), the average cephalic index 77.75 approximates to that of the Lafofa, and this group contains one brachycephal with an index of 83. The eight men from Jebel Lumun have an average index of 78.88 (extremes 74.47 and 81.79), five of these men having an index of 80 or over.

Only eleven women were measured, and all these were from Lafofa and Jebe Eliri. The average cephalic index of this small series is 76.3, the extremes being 70.4 and 79.0, the median being 77.5.

The facial and upper facial indices, though presenting considerable range, vary less than the appearance of the Nuba had led me to expect; with the exception of two indices lying between 90 and 91, the facial index of all the Nuba measured showed that they were preponderately broad-faced.

	Min.		Med.		Max.	
	F.I.	U.F.I.	F.I.	U.F.I.	F.I.	U.F.I.
Lafofa	75.5	41.0	82.7	45.6	90.2	52.6
Eliri	73.2	41.7	83.3	44.6	87.1	41.7
J. Lumun	77.2	44.4	84.3	48.3	90.2	52.2
Tira Akhdar Group ...	77.7	44.0	83.3	45.2	85.2	47.1

The nasal indices of the men of the Lafofa-Eliri group give an average of 92.41: the Lafofa (22) 91.4, and the Eliri (10) 94.12. The eight men from Jebel Lumun give an average of 95.63, while the average of the seven men

belonging to the Tira Akhdar group is 92·3. In spite of the substantial agreement of the averages of these groups, there is in every case a wide range of variation, as is shown in the following table :—

	Minimum.	Median.	Maximum.
Lafofa	76·0	90·9	106·9
Eliri	84·0	94·4	111·9
J. Lumun	75·5	97·0	104·4
Tira Akhdar	82·6	95·5	97·9

Thus, although all the Nuba are predominantly platyrrhine, mesorrhine individuals occur in all four groups, while hyperplatyrrhine subjects occur in three of the four groups, and would doubtless be found in the fourth if more measurements were taken.

The nasal measurements of the small group of eleven women from Lafofa and Eliri approximate very closely to those given by the men. The average nasal index of those women is 94·0, with a range of from 86 to 110·2 and a median of 89·1.

SERIATION OF INDICES OF THIRTY-TWO MEN OF LAFOFA AND ELIRI.

C.I.	N.I.	F.I.	U.F.I.	Nasomal. I.	Height.
64·00	76·00	90·23	52·63	129·70	1647
67·35	80·77	89·21	51·47	124·74	1650
67·68	81·48	88·97	51·42	123·71	1673
72·28	82·35	87·14	50·69	123·23	1679
72·73	82·98	86·81	50·35	122·00	1681
72·83	82·98	86·52	50·35	121·78	1685
74·87	84·00	86·03	48·95	121·22	1690
75·00	84·31	85·61	48·89	121·00	1694

SERIATION OF INDICES OF THIRTY-TWO MEN OF LAFOFA AND ELIRI—*contd.*

C.I.	N.I.	F.I.	U.F.I.	Nasomal. I.	Height.
75·76	84·91	85·11	48·52	120·95	1698
75·79	84·91	84·73	48·51	120·58	1705
75·81	86·00	84·21	48·22	120·38	1706
75·90	86·54	84·06	47·48	120·00	1713
76·22	88·00	83·82	47·14	120·00	1718
76·56	90·20	83·70	46·47	119·60	1719
76·56	90·38	83·58	46·27	119·41	1720
77·42	91·49	83·10	45·25	119·39	1721
77·49	93·48	82·84	45·09	118·95	1723
77·89	95·24	82·73	45·07	118·86	1724
78·42	95·35	82·68	45·04	118·81	1731
78·45	95·45	82·48	45·00	118·81	1734
78·49	96·08	81·43	44·94	118·56	1737
78·49	97·67	81·43	44·11	118·28	1740
78·65	97·73	81·12	43·94	116·82	1745
78·95	97·73	80·28	43·38	116·50	1750
78·95	97·87	80·15	43·26	115·73	1753
79·12	100·00	79·43	42·95	115·46	1760
79·89	100·00	77·30	42·86	113·86	1765
80·21	102·27	77·21	42·85	113·27	1772
80·22	102·38	76·06	42·64	112·00	1788
81·08	104·88	75·71	41·77	110·58	1820
81·32	106·98	75·54	41·73	—	1822
81·32	111·90	73·29	41·00	—	1904

Summing up the physical characters of the Nuba of Southern Kordofan we may say that they are a tall, stoutly-built, muscular people, with a dark, almost black skin. They are predominantly mesaticephalic, for although cephalic indices under 70 and over 80 both occur, nearly 60 per cent. of the individuals measured are mesaticephals, the remaining being dolichocephalic and brachycephalic in about equal proportions. The most striking feature of the head form in the living is a flattening of the fronto-parietal region which may be very obvious as in Nos. 7 and 106 (Plates XXXV and XXXVI), in which case it may cause the vault in the neighbourhood of the sagittal suture to appear almost keeled. So much flattening is unusual, but a minor degree is so common that it may be regarded as typical. The forehead is not usually retreating, though in a few men its backward slope is very noticeable; the degree of development of the supra-orbital ridges varies greatly.

The majority of Southern Nuba are broad-faced (euryprosopic or mesoprosopic), but a few individuals approach or even attain a low grade of leptoprosopy.

The zygomata are usually prominent, the cheekbones project forward, the nose is broad (platyrrhine or hyperplatyrrhine), the root and bridge being generally low, sometimes the tip of the nose appears as if the nose had been flattened by being pressed towards the face. The combination of these characters, with a forehead which does not retreat and which presents no prominent supra-orbital ridges, may produce a curiously flattened face in which all the features seem to be in one plane. This appearance seems to be most common in women, and is well shown in Plate XXXII, Figs. 3 and 4. The mouth is usually large, the lips vary, they may be tumid and everted, but this is not specially common.

The upper lip is sometimes long, *i.e.*, the distance between the end of the *septum nasi* and the mucous aspect of the lip may be comparatively great. The lower jaw is commonly prognathous, often very strongly so, this often gives a snouty appearance to the lower part of the face. The chin varies greatly, sometimes it recedes to a very marked extent.

Generally speaking the interior of the mouth, including the gums, from which spring the front teeth, show irregular patches of pigment, far exceeding those seen in members of the white race in the most pronounced cases of Addison's disease. Some degree of pigmentation of the sclerotics is so common that it may be said to be universal in adults. I do not remember to have seen any Nuba with oblique eyes, as shown in the photograph (No. 178, Subject 2056) figured by Miss Tucker and Dr. Myers in their paper. It will be noted that this man's origin is undetermined, his lips are so unlike those of the Nuba I have seen that I cannot but suspect that he is of mixed blood—in any case the high degree of dolichocephaly of which he is an example is somewhat unusual.

Mutilations.—Neither circumcision, excision, nor the mutilation of girls is practised, but the women of Jebel Talodi and the hills round it perforate the lower lip, in which they wear a quartz ornament (as shown in Plate XXXIII,

Fig. 2). On many hills, including, I believe, all those on which the lip ornament is worn, the lower incisors are removed in both sexes.

The Nuba do not tattoo, but the women of all the *jibal* with which I am acquainted, scar their bodies. The closeness of the cicatrices and the patterns in which they are disposed, as well as the amount of skin covered, varies on different hills. On Jebel Eliri the whole body, from the border of the hairy scalp to mid thigh, is covered with small circular button-like scars arranged in certain recognised lines and patterns (Plate XXXIV, Fig. 2). On the arms an attempt is made to produce pyramidal scars alternating with short linear scars so disposed as to form an angular pattern (Plate XXXIV, Fig. 3). At Tasume, on the Jebel Talodi, *massif*, the scars are linear, and, I believe, are made only on the thorax, back and abdomen (Plate XXXIV, Fig. 4). A few cicatrices are sometimes seen on youths and adolescents.

I am indebted to Dr. Myers for some particulars concerning the Nuba, referred to by Miss A. W. Tucker and himself in their joint paper, "A Contribution to the Anthropology of the Sudan," in the last number of this *Journal*, which enabled me to use their figures to show that the population of the more northern *jibal* of Kordofan does not differ physically from that of the Southern Hills.¹ Miss Tucker and Dr. Myers record the measurements of twenty "Nubawi." I have been able to identify the hills from which ten of these men came; one of these (Jebel Korongo) is in the far south, and I therefore exclude No. 2174. I also exclude No. 2132, who perhaps is not a full-blooded Nuba. Of the remaining eight, one was born of Nuba parents at Aswan, in Egypt, while seven subjects did not know their village, or could give Dr. Myers no precise geographical information whence they came. It is, however, improbable that these men were inhabitants of the southern hills of Dar Nuba, or that the parents of the man born at Aswan should have come from there. My reason for this opinion is that Dr. Myers' measurements were taken at Khartum and Omdurman in 1901 and 1902. At this time the Southern Nuba had come so much less into contact with foreigners (including the Khalifa and his Enirs) than had the inhabitants of the northern *jibal*, that it is unlikely that 33 per cent. of the men—all soldiers—measured by him were from the south. For these reasons I do not reject the Nuba born at Aswan, or the seven men of uncertain origin, but consider all these to be

¹ It must not be forgotten that there are a number of little known tribes occupying hills in Dar Nuba who emphatically deny that they are Nuba. The Tagalawi of eastern Kordofan are members of such a tribe, the few men whom I have seen struck me as shorter-faced than the majority of Nuba. Dr. Myers has measured seven Tagalawi, and as far as they go his figures bear out this impression. They also suggest that the Tagalawi are more round-headed than the Nuba. The average indices (calculated to the nearest half unit from the measurements given in the paper already referred to) are C.I. 79 (extremes 74.5 and 81.5); N.I. 103 (extremes 97.5 and 109.5); F.I. 76.5 (extremes 72 and 81.5); U.F.I. 44.5 (extremes 38 and 49). The average U.F.I. is derived from observation on six subjects. The Tagalawi profess Islam. I am indebted to Mr. J. W. Sagar for the information that there are two other Mahomedan peoples in Dar Nuba, the Shawabna (of Jebel Shwai) and the Shatt, who say that they are not Nuba.

inhabitants of the more northern hills of Kordofan. The following table gives the cephalic, nasal, facial and upper facial indices of eighteen men, the localities being taken from Dr. Myers' field notes. In those instances in which the indications in these notes are not sufficient to allow me to identify the geographical position of the places whence the subjects came, their "place" is given between inverted commas.

It will be seen that both the averages of the indices and their range of variation agrees closely with those already given for Southern Kordofan.

INDICES OF NUBA FROM CENTRAL AND NORTHERN KORDOFAN (CALCULATED FROM MEASUREMENTS PUBLISHED BY MISS TUCKER AND DR. MYERS).

Nos.	Locality.	C.I.	N.I.	F.I.	U.F.I.	Height.
2003	Jebel Daier	74·62	107·14	77·70	43·88	—
2006	Jebel Kadero	75·25	91·11	80·88	49·26	—
2028	"Born at Aswan in Egypt"	73·80	112·50	78·03	45·45	—
2034	Jebel Nyema	85·31	100·00	78·68	43·38	—
2050	"El Taraa near Dueim"	76·84	95·74	76·03	44·52	—
2056	"Kordofan" [? Jebel Kordofan, S.E. of El Obeid]	71·65	102·27	82·61	48·55	1·776
2057	Jebel Dubab	73·96	102·50	81·34	45·52	—
2059	Jebel Kafala, "10 days from El Obeid"	77·72	100·00	76·43	45·00	—
2062	Jebel Ghulfan	75·41	102·44	82·44	45·04	1·738
2180	Jebel Ghulfan	76·44	95·24	79·72	46·85	1·745
2070	Jebel Ghulfan	86·74	97·83	76·06	44·36	—
2071	Jebel Haraza [about 120 miles N. of El Obeid]	70·30	95·24	78·68	44·85	—
2072	"Shat, 3 days from El Obeid"	77·44	112·20	70·07	39·45	1·693
2079	"Birthplace, El Obeid"	73·71	100·00	78·57	45·71	—
2100	Jebel Miri	79·12	100·00	76·60	44·68	1·803
2111	"From Gedaref, original village unknown"	76·34	104·55	86·67	49·63	1·740
2124	"From Kufa, original village unknown"	70·21	109·76	80·30	44·70	1·747
2174	"Jebel Telau, 2 days from Ghulfan"	80·45	92·86	81·68	46·56	1·643
	Average	76·4	101·1	77·9	45·4	1·732

The extraordinary amount of variation in the appearance of the subjects figured on Plates XXXV and XXXVI must be taken to indicate that the Nuba are far from being a pure race, and this idea is borne out by the wide range of variation in their cephalic and nasal indices. That this variation really exists, and is not due to random sampling, is shown by the fact that in no case does the probable error of the means of the cephalic and nasal lengths and breadths of the thirty-two men of the Lafafa-Eliri group amount to unity. The figures are:—

C.L.	C.B.	N.L.	N.B.
190·31	144·71	47·5	43·62
$\pm 0\cdot70$	$\pm 0\cdot42$	$\pm 0\cdot47$	$\pm 0\cdot33$
(5·91)	(3·56)	(3·99)	(2·83)

The figures preceded by the sign \pm show the probable errors of the means those in parentheses express the standard deviations of the means.

It does not seem profitable in the present stage of ignorance of the physical anthropology of the Sudan to speculate on the possible source of the different stocks which may be supposed to have entered into the constitution of the Nuba of Southern Kordofan. I may, however, state that the features of some of the women reminded me of pictures of Hottentots or Bushwomen, and that one woman of this type had a skin of the colour of rather light bronze. I may also refer to two men whose photographs are reproduced on Plates XXXII and XXXVI. One of these men, judged to be about 30 years of age, has a flat face, a broad nose, prominent cheekbones, and a somewhat retreating chin, yet the lower jaw projects so much that this quality is the most striking feature of the whole face. Although this man is not specially small, the upper part of his face recalls the faces of two pygmy youths figured by Professor Elliot Smith;¹ indeed, were it not for the extreme prognathism, it would be scarcely fanciful to speak of this man as having the face of a pygmy.² The other man (No. 22), though not an absolutely isolated example of his unusual type, differs greatly from the other Nuba figured in this paper, and I can recall only two other men whose appearance made the same impression upon me. In these men, as in No. 22, the features were more refined than is usual among their comrades, and the forehead looked higher and broader—in fact, the whole appearance of the cranium suggested that its cubic capacity was considerably increased.

¹ "Notes on African Pygmies," *Lancet*, 1905, p. 425.

² It will be noted that this man's features do not in any way resemble the drawing given by Sir Harry Johnston (*Uganda*, II, p. 513) of a man of his "Pygmy-Prognathous" group.

INDICES OF FIFTY MALE NUBA FROM SOUTH KORDOFAN.

No.	Sex.	Locality.	C.I.	N.I.	F.I.	U.F.I.	Nasomal. I.	Height.
1	♂	Lafofa ...	80.22	88.00	75.71	45.00	120.58	1650
2	♂	Lafofa ...	81.32	90.38	79.43	43.26	113.86	1822
3	♂	Lafofa ...	79.89	76.00	81.43	47.14	122.00	1685
4	♂	Lafofa ...	74.87	102.27	85.61	43.94	119.39	1690
5	♂	Eliri ...	72.73	86.54	87.14	51.42	121.22	1753
6	♂	Eliri ...	64.00	100.00	84.21	42.86	123.23	1765
7	♂	Lafofa ...	80.21	84.91	85.11	50.35	118.81	1788
8	♂	Lafofa ...	79.12	97.73	80.15	44.11	120.00	1723
9	♂	Eliri ...	78.95	93.48	76.06	42.95	115.73	1719
10	♂	Lafofa ...	78.49	97.87	84.06	44.94	—	1718
11	♂	Lafofa ...	78.49	82.98	82.73	50.35	129.70	1647
12	♂	Lafofa ...	78.95	91.49	82.48	45.25	116.82	1698
13	♂	Lafofa ...	67.35	84.91	86.81	50.69	118.86	1731
14	♂	Lafofa ...	72.83	100.00	89.21	47.48	119.41	1820
15	♂	Lafofa ...	75.90	97.73	77.30	45.09	118.81	1904
16	♂	Lafofa ...	78.45	82.98	82.84	48.51	—	1724
17	♂	Eliri ...	75.79	97.67	83.58	46.27	120.00	1706
18	♂	Eliri ...	77.42	86.00	81.43	42.85	113.27	1679
19	♂	Lafofa ...	77.89	104.88	86.03	43.38	121.00	1713
22	♂	Lafofa ...	78.65	82.35	90.23	52.63	110.58	1760
23	♂	Lafofa ...	81.08	81.48	81.12	48.95	118.56	1694
24	♂	Lafofa ...	81.32	80.77	83.82	51.47	118.95	1721
25	♂	Eliri ...	76.56	96.08	86.52	48.22	121.78	1750
26	♂	Eliri ...	76.22	84.00	83.70	48.89	112.00	1705
28	♂	Lafofa ...	67.68	95.24	84.73	45.04	118.28	1681
29	♂	Lafofa ...	72.28	106.98	80.28	45.07	124.74	1734
30	♂	Lafofa ...	75.76	102.38	75.54	41.00	119.60	1772
33	♂	Lafofa ...	78.42	84.31	88.97	48.52	116.50	1745
35	♂	Eliri ...	77.49	111.90	73.29	41.77	120.95	1720
40	♂	Eliri ...	75.81	95.35	82.68	41.73	115.46	1737
41	♂	Lafofa ...	75.00	95.45	77.21	42.64	123.71	1673
43	♂	Eliri ...	76.56	90.20	83.10	46.47	120.38	1740
Average (32) ...			76.42	92.26	82.26	46.19	119.13	1730.2

No.	Sex.	Locality.	C.I.	N.I.	F.I.	U.F.I.	I.	Height.
102	♂	Jebel Lumun ...	77·09	94·00	87·79	51·14	120·88	1734
103	♂	Jebel Lumun ...	80·79	100·00	82·35	44·85	117·58	1730
109	♂	Jebel Lumun ...	80·00	102·17	82·86	47·85	120·20	1752
111	♂	Jebel Lumun ...	81·14	91·30	77·27	48·48	121·05	1672
112	♂	Jebel Lumun ...	74·47	104·44	88·06	52·24	119·79	—
113	♂	Jebel Lumun ...	80·00	93·48	82·22	44·44	121·42	—
114	♂	Jebel Lumun ...	81·08	104·26	90·24	51·21	119·57	—
115	♂	Jebel Lumun ...	76·50	75·51	83·46	45·86	110·10	—
		Average (8) ...	78·88	95·63	84·28	48·25	118·82	1722
116	♂	Jebel Tira Akhdar ...	83·06	95·57	78·10	44·52	116·84	1710
117	♂	Jebel Tira Akhdar ...	78·89	97·67	85·25	45·08	121·98	1681
118	♂	Jebel Tira Akhdar ...	77·01	88·37	83·33	46·21	119·57	1700
119	♂	Jebel Tira Akhdar ...	77·60	82·61	77·78	45·19	122·08	1682
120	♂	Tira Mandi ...	73·40	95·12	83·58	44·03	122·10	1662
121	♂	Kanderma ...	79·35	89·36	84·29	47·14	122·73	1686
122	♂	Kawama ...	75·00	97·92	84·67	46·71	123·76	1768
		Average (7) ...	77·75	92·37	82·42	45·55	121·39	1698
106	♂	Jebel Talodi ...	69·89	111·90	86·47	48·12	123·15	1702
108	♂	Jebel Talodi ...	70·83	93·33	81·88	42·75	120·62	1666
107	♂	Jebel Talodi ...	73·44	102·50	75·19	41·35	117·39	1740

INDICES OF ELEVEN FEMALE NUBA FROM SOUTH KORDOFAN.

No.	Sex.	Locality.	C.I.	N.I.	F.I.	U.F.I.	Nasomal. I.	Height.
20	♀	Eliri ...	73·96	86·00	92·62	57·38	117·89	1538
21	♀	" ...	78·45	89·13	78·52	45·19	117·35	1541
27	♀	Lafofa ...	78·82	100·00	76·47	44·85	118·81	1586
31	♀	" ...	79·10	86·05	80·95	47·62	117·89	1563
32	♀	Eliri ...	70·43	89·13	86·92	51·54	120·00	1550
34	♀	Lafofa ...	79·31	88·89	85·71	46·03	123·71	1647
36	♀	Eliri ...	74·73	100·00	86·72	47·66	116·16	1664
37	♀	" ...	79·07	107·69	77·60	42·40	117·39	1552
38	♀	Lafofa ...	76·14	87·23	88·24	51·26	125·51	1620
39	♀	" ...	77·53	90·00	79·55	50·00	115·15	1472
42	♀	" ...	72·83	110·26	85·00	46·67	118·95	1560
		Average (11) ...	76·30	94·03	83·48	48·23	118·07	1572

MEASUREMENTS OF NUBA

No.	Sex.	Locality.	Age.	Height.	Head Length.	Head Breadth.	Biauricular Breadth.	Bizygomatic Breadth.	Bigonial Breadth.
1	♂	Lafofa ...	60	1650	182	146	126	140	102
2	♂	" ...	40	1822	182	148	130	141	92
3	♂	" ...	25	1685	184	147	122	140	100
4	♂	" ...	20	1690	187	140	125	132	108
7	♂	" ...	45	1788	192	154	130	141	94
8	♂	" ...	20	1723	182	144	125	136	90
10	♂	" ...	—	1718	186	146	125	138	103
11	♂	" ...	25	1647	186	146	126	139	96
12	♂	" ...	25	1691	190	150	122	137	100
13	♂	" ...	—	1731	196	132	130	144	102
14	♂	" ...	40	1820	184	134	124	139	102
15	♂	" ...	20	1904	195	148	122	141	110
16	♂	" ...	35	1724	181	142	120	134	96
19	♂	" ...	20	1713	190	148	122	136	100
22	♂	" ...	40	1760	192	151	119	133	96
23	♂	" ...	50	1694	185	150	134	143	100
24	♂	" ...	35	1721	182	148	126	136	100
28	♂	" ...	25	1681	198	134	120	131	84
29	♂	" ...	30	1734	202	146	124	142	100
30	♂	" ...	25	1772	198	150	120	139	94
33	♂	" ...	25	1745	190	149	124	136	112
41	♂	" ...	25	1673	192	144	127	136	108
5	♂	Eliri ...	40	1753	198	144	124	140	100
6	♂	" ...	50	1765	203	130	120	133	105
9	♂	" ...	35	1719	190	150	128	142	102
17	♂	" ...	—	1706	190	144	116	134	90

OF SOUTH KORDOFAN.

Facial Length.	Upper Facial Length.	Nasal Length.	Nasal Breadth.	Interocular Breadth.	Bimalar Breadth.	Nasomalar Arc.	Circumference of Head.
106	63	50	44	38	102	123	542
112	61	52	47	35	101	115	538
114	66	50	38	31	100	122	542
113	58	44	45	33	98	117	544
120	71	53	45	34	101	120	562
109	60	44	43	36	100	120	530
116	62	47	46	32	95	Left eye destroyed.	534
115	70	47	39	32	101	131	530
113	62	47	43	35	107	125	567
125	73	53	45	35	106	126	553
124	56	50	50	38	103	123	512
109	65	44	43	33	101	120	576
111	65	47	39	34	94	One eye destroyed.	532
117	59	41	43	39	100	121	555
120	70	51	42	33	104	115	562
116	70	54	44	35	97	115	547
114	70	52	42	31	95	113	553
111	59	42	40	31	93	110	572
114	64	43	46	35	97	121	556
105	57	42	43	34	102	122	556
121	66	51	43	36	103	120	558
105	58	44	42	34	97	120	554
122	72	52	45	35	99	120	559
112	57	44	44	37	99	122	555
108	61	46	43	35	108	125	563
112	62	43	42	34	100	120	555

MEASUREMENTS OF NUBA

No.	Sex.	Locality.	Age.	Height.	Head Length.	Head Breadth.	Biauricular.	Bizygomatic.	Bigonial.
18	♂	Eliri ...	65	1679	186	144	116	140	96
25	♂	" ...	35	1750	192	147	129	141	99
26	♂	" ...	35	1705	185	141	120	135	95
35	♂	" ...	20	1720	191	148	128	146	102
40	♂	" ...	—	1737	186	141	114	127	85
43	♂	" ...	—	1740	192	147	126	142	100
102	♂	Jebel Lumun ...	35	1734	179	138	117	131	93
103	♂	" ...	50	1730	177	143	122	136	95
109	♂	" ...	40	1752	190	152	122	140	111
111	♂	" ...	30	1672	175	142	119	132	90
112	♂	" ...	18	—	188	140	116	134	96
113	♂	" ...	18	—	180	144	121	135	98
114	♂	" ...	18	—	184	150	117	123	95
115	♂	" ...	—	—	183	140	118	133	90
107	♂	J. Talodi ...	25	1740	192	141	120	133	86
106	♂	" ...	30	1702	186	130	116	133	107
108	♂	" ...	—	1666	192	136	124	138	94
116	♂	J. Tira Akhdar	50	1710	183	152	122	137	96
117	♂	" " ...	—	1681	180	142	114	122	97
118	♂	" " ...	30	1700	187	144	119	132	94
119	♂	" " ...	30	1682	192	149	124	135	98
120	♂	J. Tira Mandi ...	—	1662	188	138	116	134	94
121	♂	J. Kanderma ...	—	1686	184	146	120	140	90
122	♂	J. Kawama ...	—	1768	192	144	126	137	102

OF SOUTH KORDOFAN—*continued.*

Facial Length.	Upper Facial Length.	Nasal Length.	Nasal Breadth.	Interocular.	Bimalar.	Nasomalar.	Circumference of Head.
114	60	50	43	31	98	111	542
122	72	52	45	35	99	120	555
113	66	50	42	31	100	112	548
107	61	42	49	40	105	127	560
105	53	43	41	31	97	112	530
118	51	51	46	38	103	124	558
115	67	50	47	32	91	110	530
112	61	47	47	30	91	107	530
116	66	46	47	36	99	119	560
102	64	46	42	31	95	115	516
118 ?	70	45	47	35	96	115	533
111	60	46	43	34	98	119	535
111	63	47	49	33	92	110	545
111	61	49	37	36	99	109	532
100	55	40	41	30	92	108	555
115	64	42	47	35	95	117	535
113	59	45	42	34	97	117	543
107	61	45	43	35	95	111	545
104	55	43	42	34	91	111	529
110	61	43	38	31	92	110	543
105	61	46	38	33	92	113	560
112	59	41	39	36	95	116	542
118	66	47	42	32	98	120	537
116	64	48	47	33	101	125	545

MEASUREMENTS OF NUBA

No.	Sex.	Locality.			Age.	Height.	Head Length.	Head Breadth.	Biauricular.	Bizygomatic.	Bigonial.
20	♀	Eliri	...	...	60	1538	192	142	116	122	88
21	♀	„	60	1541	181	142	126	135	90
36	♀	„	40	1664	182	136	120	128	90
37	♀	„	25	1552	172	136	112	125	?
32	♀	„	35	1550	186	131	119	130	90
27	♀	Lafafa	...	...	30	1586	178	134	114	136	92
31	♀	„	40	1563	177	140	117	126	90
34	♀	„	25	1647	174	138	120	126	96
38	♀	„	20	1620	176	134	114	119	88
39	♀	„	55	1472	178	138	120	132	97
42	♀	„	25	1560	184	134	112	120	86

OF SOUTH KORDOFAN—*continued.*

Facial Length.	Upper Facial Length.	Nasal Length.	Nasal Breadth.	Interocular.	Bimalar.	Nasomalar.	Circumference of Head.
113	70	50	43	32	95	112	546
106	61	46	41	36	98	115	518
111	61	45	45	36	99	115	520
97	53	39	42	34	92	108	512
113	67	46	41	33	100	120	533
104	61	40	40	36	101	120	513
102	60	43	37	37	95	112	520
108	58	45	40	33	97	120	520
105	61	47	41	36	98	123	520
105	66	50	45	32	99	114	517
102	56	39	43	32	95	113	542

Explanation of Plates.

PLATE XXXII.

- Fig. 1.—Arabic-speaking negroid from village at base of Jebel Eliri.
Fig. 2.—Eliri youth (No. 40).
Fig. 3.—Eliri woman (No. 36) ; full face.
Fig. 4.—Eliri woman (No. 36) ; profile.
Fig. 5.—Eliri man (No. 6).
Fig. 6.—Lafofa man (No. 30).

PLATE XXXIII.

- Fig. 1.—Group of Nuba of Jebel Eliri. The man squatting is No. 2 ; behind him stands No. 13 with a snuff gourd hanging from his neck ; the man sitting with clasped fingers is No. 3.
Fig. 2.—Group of women of Jebel Talodi in festal attire.

PLATE XXXIV.

- Fig. 1.—Men of Jebel Talodi, champion wrestlers.
Fig. 2.—Lafofa woman showing cicatrices.
Fig. 3.—Lafofa woman ; side view of bust showing cicatrices.
Fig. 4.—Women of Jebel Talodi showing linear cicatrices on abdomen and back.

PLATE XXXV.

Full face and profile of Nuba types.

PLATE XXXVI.

Full face and profile of Nuba types.



FIG. 1.—ARABIC-SPEAKING NEGROID
FROM VILLAGE AT BASE
OF JEBEL ELIRI.

FIG. 2.—ELIRI YOUTH
(NO. 40).

FIG. 3.—ELIRI WOMAN
(NO. 36).

FIG. 4.—ELIRI WOMAN
(NO. 36).

FIG. 5.—ELIRI MAN (NO. 6).

FIG. 6.—LAFOFA MAN
(NO. 30).

THE PHYSICAL CHARACTERS OF THE NUBA OF KORDOFAN.



FIG. 1.—GROUP OF NUBA OF JEBEL ELIRI.



FIG. 2—GROUP OF WOMEN OF JEBEL TALODI IN FESTAL ATTIRE.

THE PHYSICAL CHARACTERS OF THE NUBA OF KORDOFAN.



FIG. 1.—MEN OF JEBEL TALODI,
CHAMPION WRESTLERS.



FIG. 2.—LAFOFA WOMAN SHOWING CICATRICES.

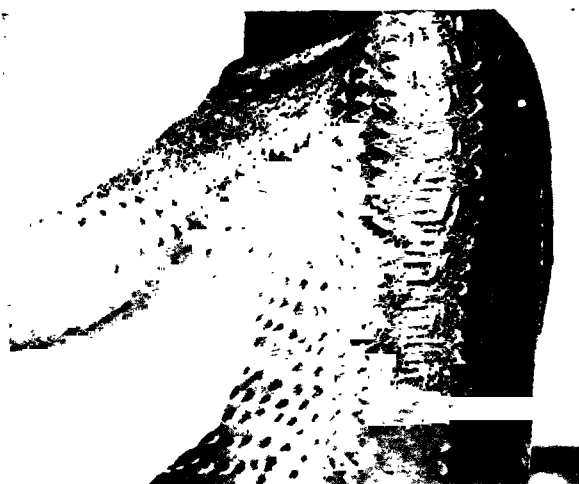
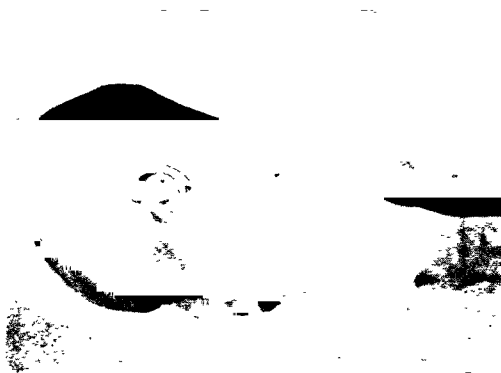


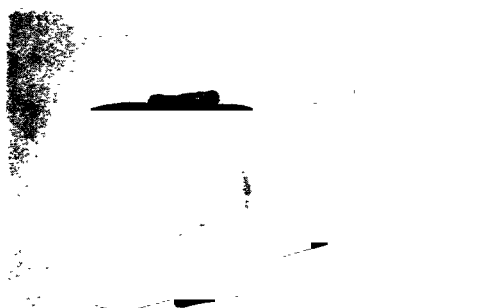
FIG. 3.—LAFOFA WOMAN, SIDE VIEW OF BUST
SHOWING CICATRICES.



FIG. 4.—WOMEN OF JEBEL TALODI, SHOWING LINEAR
CICATRICES ON ABDOMEN AND BACK.



1



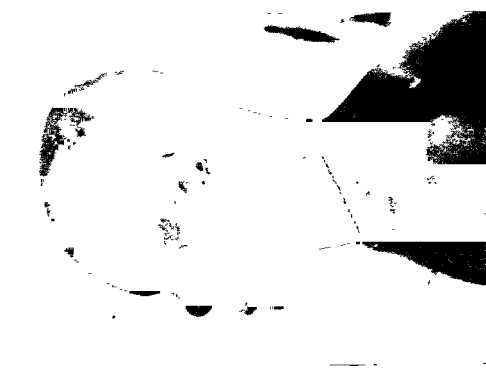
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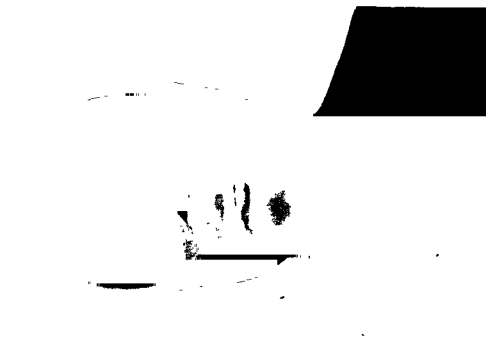
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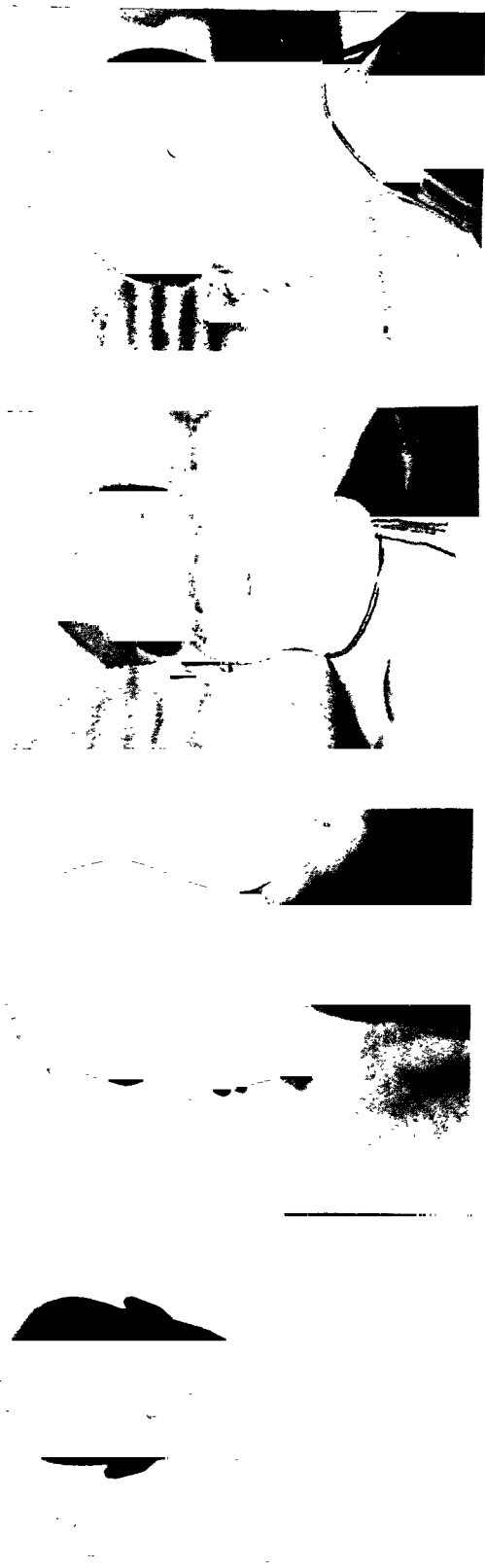


9



9

FULL FACE AND PROFILE OF NUBA TYPES.
THE PHYSICAL CHARACTERS OF THE NUBA OF KORDOFAN.



22

22

106

106



YOUTH OF JEBEL ELIRI WITH FEATURES RECALLING PYGMY.

FULL FACE AND PROFILE OF NUBA TYPES.

CHIDENA "CHIEF" OF JEBEL LUMUN.

THE PHYSICAL CHARACTERS OF THE NUBA OF KORDOFAN.

MODERN BRASS-CASTING IN WEST AFRICA.

BY HENRY BALFOUR, M.A., F.Z.S.

[WITH PLATES XXXVII, XXXVIII.]

IN view of the great interest aroused by the discovery of a marvellous collection of antique works of art in bronze and brass, cast by the *cire perdue* process, which were unearthed after the capture of Benin city by the British punitive expedition in 1897, the following description of this process of casting as practised to-day in West Africa is worth placing on record. Some while ago I asked one of my anthropology students, Mr. R. W. Rattray, who holds an official position in Nigeria, if he would kindly endeavour to secure for the Pitt Rivers Museum in Oxford a small series illustrating the stages in the modern process of casting figures in brass or bronze through the medium of *cire perdue*, and also to ascertain as many of the details of the art as possible. I was anxious to associate with the antique Benin bronzes exhibited in the Museum a modern series illustrating the methods by which the old Nigerian artists had achieved their results. Mr. Rattray, to whom I am much indebted, has not only brought home and presented to the Museum the three specimens figured (Plate XXXVII, Figs. 1, 2, and 3), showing the three principal stages involved in the casting of a human head in brass, but also obtained an account of the process from the artist himself—a Yoruba native named Ali—living in German Togoland. This description of his methods was taken down from the artist's own lips by Mr. Rattray's *mullam* (teacher of Hausa), and has been literally translated from the Hausa manuscript. The account is given exactly as it stands, with all its quaint and pedantic ceremoniousness, which has a certain fascination of its own. It runs as follows:—

“In the name of Allah, the Compassionate, the Merciful. This account will show how the (Benin) figures are made. This work is one to cause wonder. Now this kind of work is done with clay and wax and red metal and solder (?) and lead and fire. The first thing to be done if one of the figures is to be made is to get clay and work it most thoroughly, and get the little stones which are in it worked out. It is well worked in the hands. Next the shape of the top of a head is constructed, and then the jaws on the same piece as the top of the head. Then the nose is shaped, and the eyes and the lips made. Then a certain stick which has been shaped like a knife is put (against the model) and it is smoothed (with this). A very little water is put on when it is being thus smoothed until it is perfect; then it is set in the sun to dry. [Plate XXXVII, Figs. 1*a* and 1*b*.]

“Next wax is melted and poured over it (the clay model), and then it is

gone over again with the knife; as it hardens it is smoothed over. When it has been well done, then a fire is kindled and a knife put in it, and (when) it is slightly warm it is taken up and pressed over the wax in order that it may adhere well (to the clay foundation). The eyes get the finishing touches, and the eyebrows and mouth and chin and beard. Then that stick like a knife is got out and dipped in water, and pressed against the wax and passed over it. It is well smoothed, and shines (all over). [Plate XXXVII, Figs. 2*a* and 2*b*.]

"If the model is of a woman's head, then the hair adornment is put on. How this adornment of the hair is made is as follows:—Wax is rolled out till it is like a string—water is used—(and) it forms a long piece. He (the smith) cuts it into pieces, and fastens them on top of the head. Then he takes a razor and cuts (them the required length). Next he cuts off other short pieces of wax and sticks them along the head. Then he rolls out another piece of wax with water, making it long like a rope. He divides it in two (down the middle, not across), lays them side by side, and puts them on top of the first upright pieces and sticks the whole on; the part left over he cuts off and casts aside. Then he prepares a certain broad piece of wax and makes ears out of it (and) fixes them on. But whenever he is about to fasten any piece on, first he puts the knife in the fire and presses it against the wax. Then he sits down—this (part of the work) is completed.

"There remains the pouring in of the metal. When he has finished (the part just described) he takes up clay (and) covers the whole head with it, leaving only a small hole. He puts it in the sun to dry—this part is finished. There remains the pouring in of the metal.

"This description is of the pouring in of the metal. The way the metal is poured in is (as follows). When the fire has been brought, it is poured into the melting furnace and the bellows are set to work and the fire blown and charcoal poured in. Then the model is lifted and placed on the fire, (and) water is poured into a pot or cup. When the model becomes heated then the wax inside melts. Then it is taken up, the tongs or some sticks are placed across the pot (of water) and the figure put on top; and the wax keeps dropping out. And it is held so until all the wax has melted and dropped into the water. Then a great quantity of charcoal is poured (into the furnace), (and) the figure (in clay) is set on the fire. Bars of metal are being cut with a hammer—many pieces are broken up in this way and put in the smelting-pot. They scrape out a hole in the charcoal and put the smelting-pot in, replace the charcoal again and cover up. The clay figure is brought and set on the fire. They keep blowing the bellows and this clay lump figure is turned till red hot. When the metal has melted then the figure is taken up, a hole is dug, and it is placed in it so that it is firmly fixed. The hole left in the clay is cleared out and the melted metal poured in. If it is filled, that is well; if not, more is added to fill it. If full, then (the work) is finished. Next it is set aside to cool, then (the outside covering of clay) broken off, [Plate XXXVII, Figs. 3*a* and 3*b*] then you see a beautiful figure. That is it—the work of Ali is completed."

The composition of the metal is not clear from the translation, but I take it that it may be legitimate to read for "red metal and solder and lead," "copper, zinc and lead," which would give a true brass with lead added as is frequently done, I presume to render the alloy more readily fusible. I have not as yet been able to have the composition analyzed, but hope to do so later.

Of the specimens secured by Mr. Rattray, the clay head (Plate XXXVII, Figs. 1*a* and 1*b*) which forms the first stage in the process, is 27 cm. high and is carefully fashioned to form the core upon which the wax model may be built. It is of well-worked clay, and while accurately shaped as regards the general outline of the desired design, is not worked up in detail, and has no suggestion of ears and other surface details. It is merely the base upon which the wax may be spread to a more or less uniform thickness. The core is hollow, with a view, no doubt, of giving it an equal thickness with that of the outer casing-mould, so as to admit of a uniform rate of heating and of cooling throughout the mass.

Figs. 2*a* and 2*b* show a similar clay core enveloped in the finished wax model. In this wax model all the details required in the brass casting appear. The wax is of an average thickness of about 3 mm., the ears being much thinner and unsupported by the core.

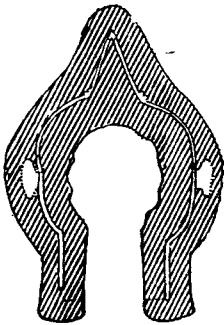


FIG. 4.

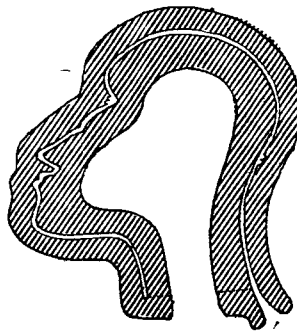


FIG. 5.

In the next stage (Figs. 3*a* and 3*b*, also Figs. 4 and 5), the wax model having first been completely encased in clay to a thickness varying from about 1.5 cm. to 3.3 cm., is melted and allowed to escape through the duct (seen at A in Fig. 3*b* and in Fig. 5) which is left for the purpose. The molten brass is poured in through the same duct, and, if the casting is successful, completely fills the space formerly occupied by the wax, the result being an exact *replica* of the wax model in brass. This is shown in Figs. 3*a* and 3*b*, a portion of the outer casing-mould having been broken away so as to expose the facial portion of the brass casting. The clay, both of the core and casing-mould, where it is in contact with the brass and to a considerable depth through its mass, has been burnt black by the heat of the molten metal, and resembles carbon. The inner surface of the core and outer surface of the casing-mould are baked to a light reddish colour by the action of the fire. In this specimen (Fig. 3*a*) it will be seen that the casting has not been

successful, since, owing to the metal having cooled too rapidly, or perhaps to the generation of steam or gases within the mould, the brass has not run evenly over the whole space, the result being that faulty gaps remain in the face, notably over the chin and between the mouth and nose, the latter gap extending partly over the left cheek. Through these gaps in the brass the blackened surface of the clay core is seen. The operation has, therefore, been a partial failure, though as such the specimen is a particularly instructive one. As such defects cannot be remedied it would be necessary to repeat the entire process from the beginning to produce a satisfactory result.

Some of Ali's designs in brass are fairly ambitious, as may be seen in the examples shown in Figs. 6 and 7. In one specimen (Fig. 6) is seen a chief on horseback attended by his wives, one with a child on her back, and sundry retainers; at the top a lion surrounded by four cocks. The other piece (Fig. 7), brought home by Mr. Rattray, has a male and a female figure, each about 50 cm. high, designed to form supporters of a pair of small elephant's tusks. Behind each figure is a dog. The tusks here shown are not the original pair, which were smaller. The large hollow-cast head suspended between the figures, is hung from a short flat bar furnished with two rings set at an angle, so that they could be slipped over the points of the tusks, from which the head was suspended. The links seen hanging below the head are for attaching to the loose links upon two rings fitting round the tusks about half-way down, by which the head was held steady and prevented from swinging. Mr. Rattray tells me that these elaborate designs are probably now purely fanciful, and without any special symbolic meaning or obvious utility.

Although the products of Ali's foundry fall far short of the finer bronze castings of the old artists of Benin, they are none the less very creditable productions, and betray a considerable knowledge of the higher *cire perdue* technique. They are interesting, not only as examples of a slightly degenerate survival of a once flourishing local art, but also as giving an insight into the details of the process whereby the wonderful ancient Bini bronze castings were achieved.

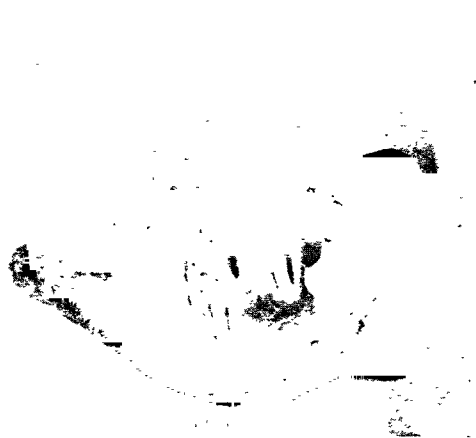


FIG. 3A.



FIG. 3B.

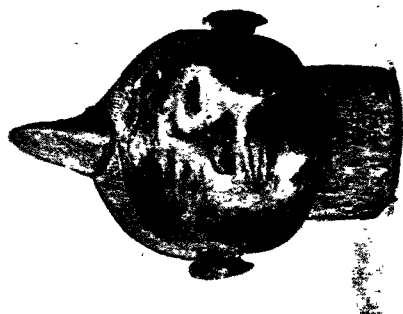


FIG. 2A.

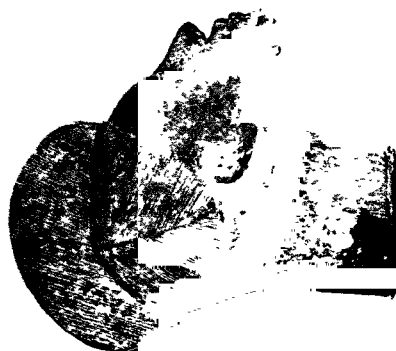


FIG. 2B.

MODERN BRASS-CASTING IN WEST AFRICA.



FIG. 1A.

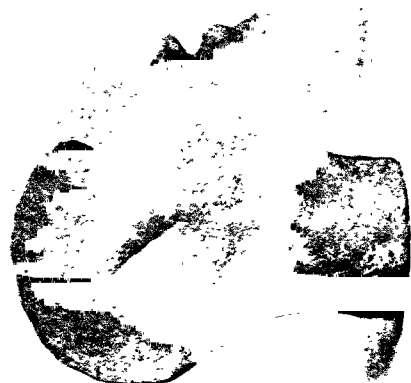


FIG. 1B.



FIG. 6.

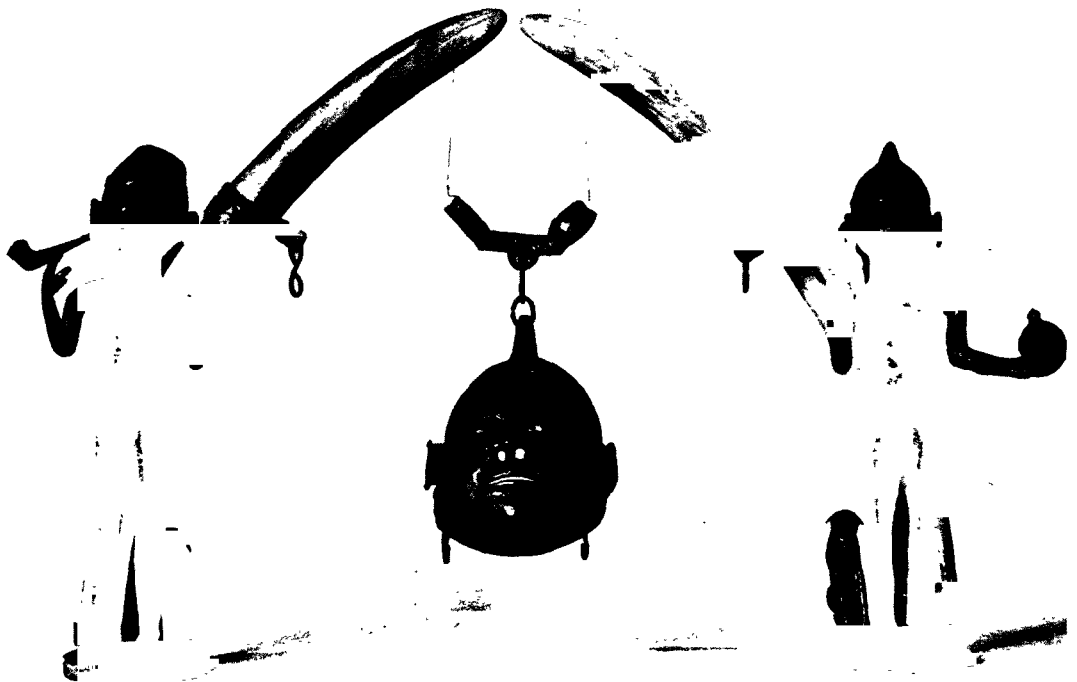


FIG. 7.

MODERN BRASS-CASTING IN WEST AFRICA.

ETHNOLOGICAL PROBLEMS IN CANADA.

BY FRANZ BOAS.

At the meeting of the International Congress of Americanists, held at Quebec in 1906, I called attention to a number of unsolved problems relating to the ethnology of Canada. If on the present occasion I venture to speak again on this subject, I am prompted by its urgency. With the energetic economic progress of Canada, primitive life is disappearing with ever-increasing rapidity; and, unless work is taken up at once and thoroughly, information on the earliest history of this country, which has at the same time a most important bearing upon the general problems of anthropology, will never be obtained.

During the last three years, comparatively speaking, very little anthropological work has been done in the Dominion. The Archaeological Institute of Ontario has continued its work. Mr. Teit is still carrying on his valuable researches on the Salish tribes of British Columbia. Dr. Lowie has obtained some information on the tribes of the southern Mackenzie region; but the most important investigation has been the study of the Ojibwa by the lamented William Jones, who lost his life in the service of science. Under the auspices of the Carnegie Institution, he made a profound study of the tribes of Lake Superior. Some work has also been conducted by Mr. Hill-Tout, under the auspices of the Committee of your Association appointed to conduct an ethnological survey of Canada. Some valuable information, collected by Scotch and American whalers in the northern waters of the Dominion, has also been accumulated since 1906.

I do not propose to discuss to-day in detail the various special problems that invite investigation. I may be allowed merely to point out again that the interior of Labrador, the eastern part of the Mackenzie Basin, the northern interior of British Columbia, the Kootenay valley, and southern and western Vancouver Island require intensive study.

During the last twenty years a general reconnaissance of the ethnological conditions of the Dominion has been made, largely stimulated by your Association; and it seems to my mind that the time has passed when superficial reports on the various tribes and on the archaeological remains of various districts are of great value. Collections of miscellaneous data hastily gathered can no longer take the place of a thorough study of the many important anthropological problems that await solution. Brief reports on local conditions were well enough when even the rough outlines of our subject had not come into view. Since these have been laid bare a different method is needed. Not even exhaustive descriptions of

single tribes or sites fulfil the requirement of our time. We must concentrate our energies upon the systematic study of the great problems of each area. The fruitfulness of such inquiries following general surveys has been demonstrated by the scientific success of the work of the Cambridge Torres Strait Expedition, and by the many points cleared up by the systematic inquiries of the Jesup North Pacific Expedition, which dealt with the ethnology of the coast of British Columbia, Alaska, and north-eastern Asia.

I may be allowed to formulate to-day a few problems that seem to me of great magnitude, and which must be solved by the labours of an ethnological survey of Canada. In doing so, I may omit mention of the importance of all anthropological and ethnological research for the purpose of clearing up the earliest history of the country. I will rather call attention to a few problems relating to the whole continent, the solution of which rests on a thorough study of the tribes of Canada.

In a general survey of the ethnic conditions of the American Continent a peculiar uniformity of culture may be observed among the Indians living around the Gulf of Mexico and the Caribbean Sea, on the Great Plains, and in the eastern United States and in a considerable part of South America. All these tribes, notwithstanding far-reaching differences among themselves, have so much in common, that their culture appears to us as specifically American. The extended use of Indian corn, of the bean and the squash, the peculiar type of ritualistic development, their social institutions, their peculiar angular decorative art, are among the most characteristic features common to this area. When we compare this culture with the cultures of Polynesia, Australia, Africa, or Siberia, the similarities appear clearly by contrast with the non-American types of culture, and the common American traits stand out quite markedly.

There are, however, a number of American tribes that differ in their culture from that of the large area just mentioned. In South America many tribes of the extreme south and of the Atlantic coast, far into the interior of Brazil, exhibit marked differences from their north-western neighbours. On the northern continent the tribes of the Arctic coast, of the Mackenzie basin, of the Western Plateaus, and of California, do not participate in the type of culture referred to before. Looking at the distribution of these phenomena from a wide geographical standpoint, it appears that the tribes inhabiting the extreme north and north-west and those inhabiting the extreme south and south-east, have ethnic characteristics of their own.

This observation gives rise to two important lines of inquiry: the one relating to the origin of the similarities in what may be called in a wider sense the middle part of America, the other relating to the interpretation of the characteristics of the marginal areas: the one in the extreme south-east of South America, the other in the extreme north-west of North America. The unity of culture in the former area suggests mutual influences among the tribes of this vast territory. The solution of this problem must be attempted by a searching study of the tribes

concerned, beginning in the Argentine Republic and reaching northward to the Great Lakes and the Western Prairies, and including the continental bridge between North and South America formed by Central America, as well as the insular bridge formed by the West Indies.

The isolation of the tribes of the extreme south-east and of the extreme north-west suggests that these districts may have preserved an older type of American culture that has not been exposed, or that has at least not been deeply impressed by the influences that swept over the middle parts of the continent and left their impress everywhere. If our point of view is correct, we might expect to find a gradual decrease of the typical middle American elements as we go northward and southward; and we might expect that on the whole the tribes least affected were also the latest to come under the dominating influence of middle American culture. From what I have said it appears that the bulk of the Canadian aborigines belong to the northern marginal area. The important problem of the significance of the type of culture here found is therefore specifically a Canadian problem.

Its solution must be attempted by means of a painstaking analysis of the physical characteristics, languages, and forms of culture of the various tribes of the Dominion, with a view to segregating the characteristics of the older aboriginal type of culture from those elements that may have been imported from the south. Some general considerations relating to this subject may here be given.

In the east the Iroquois seem to be closely allied to tribes of the south. Although historical evidence shows that at the time of the discovery the Iroquois were located along the Lower St. Lawrence River, where they were met by Champlain, I have reasons to believe that the previous seats of this tribe were somewhere in the southern part of the United States, perhaps near the Mississippi River.

The Cherokee, who are linguistically related to the Iroquois, have resided in the Southern Appalachian area ever since they have been known, thus forming a link between the Iroquois and the Southern tribes. Other tribes, still more closely related to the Iroquois, lived near them. What appears to me as more important is the fact that the morphological structure of the Iroquois language has nothing in common with the structure of Eskimo, Algonquin, and Siouan tribes, whose neighbours they are in the north, and with whom they have been in contact during the last few centuries; but that it must be classed with the highly incorporating languages of the south-west, which embody the nominal object in the verb—a peculiarity which was formerly believed to be characteristic of all American languages. In morphological features, Iroquois and Pawnee are ever so much more closely related than Iroquois and any of the languages spoken in the north-eastern part of the Continent.

Although the relationship between the Iroquois and the tribes of the south, if it really exists, may well be so old that none of the cultural elements belonging to the one area exist in the other, the linguistic observations here referred to

necessitate inquiries in this direction. As a matter of fact, it is easy to show that the Iroquois have absorbed or retained many of the most characteristic features of middle American culture; and we may even venture to point out that some of their inventions, like the blow-gun, connect them directly with the tribes of the Gulf of Mexico and of South America. I am inclined to lay great stress upon the peculiar development of the clan system of the Iroquois and upon the type of their tribal organization, which exhibits the very common American trait that social divisions are assigned definite political functions.

If these views should prove to be true, the Iroquois would have to be considered as not belonging to the northern marginal area.

The conditions among the Algonquin are quite different. The Algonquin tribes have changed their habitat so extensively during the last few centuries that it seems necessary, first of all, to reconstruct their earlier distribution. In comparatively speaking recent times the two important western tribes of Canada—the Ojibwa and Cree—resided north and north-east of the Great Lakes. They have gradually migrated westward, and their territory extends at present to the foot-hills of the Rocky Mountains. We even know of Cree warriors who reached a point near Kamloops on the Thompson River in British Columbia.

A comparison between the culture of the Algonquin and that of their neighbours of the prairies shows even at the present time a peculiar contrast. The Algonquin appear as the typical inhabitants of the north-eastern woodlands. They were essentially food-gatherers, and agriculture played a very unimportant rôle in their life. They carried with them the peculiar Mide ceremonies which have been adopted by their nearest Siouan neighbours, particularly by the Winnebago. The most western offshoots of the Algonquin are highly differentiated. The Cheyenne and Arapaho, as well as the Blackfoot, who belong in part to the Dominion of Canada, have come to be prairie tribes. It has been shown, however, that the Cheyenne and Arapaho, who resided formerly upon the eastern borders of the Prairie, practised agriculture; while the Blackfoot seem to have come from the Saskatchewan, where they may have lived in a way similar to the present Central Algonquin tribes north of the Great Lakes. From these considerations I am inclined to infer that the Algonquin were at one time a north-eastern tribe; that the most southern branches—namely, those extending through the Middle Atlantic States, and south of the Iroquois towards Lake Michigan—have by contact been assimilated to the tribes of the south-east; while the most western offshoots, then living on the Upper Mississippi, were influenced by the agricultural tribes of the Lower Mississippi. If this view be correct, we may expect to find the older type of Algonquin culture north of the Great Lakes and in the interior of Labrador, which for this reason are particularly inviting to the student. From what little I know of the unpublished results of Dr. Jones's study of the Ojibwa, north of Lake Superior, the views here expressed seem to be fairly well supported, and are certainly worthy of further investigation. On the whole, the organization of the northern Algonquin seems to be so loose, their social structure so simple,

that the impression of a strong contrast between the tribe and those of the south is conveyed. The conditions in Nova Scotia and the Atlantic provinces, where related though distinct tribes reside, are also in accord with the views here expressed.

Still clearer are these conditions in the vast area extending from Hudson Bay north-west to the Arctic Ocean, and westward into the interior of Alaska and to the Coast Range of British Columbia. This is the home of the Athapascan tribes. Their migrations and adaptations to different social conditions secure to them a peculiar place among the tribes of North America.

Isolated Athapascan tribes are found all along the Pacific Ocean, in British Columbia, in Washington, Oregon, and California; and two of the most important tribes of the South—the Apache and Navaho, who occupy the borderland between the United States and Mexico—belong to this stock. All the isolated bands in Oregon share the Oregonian culture, and are indistinguishable in their physical type from their neighbours speaking other languages. The Athapascans in California are Californians in type and culture; and those of the south-west are a typical south-western tribe in appearance as well as in their industrial arts and their beliefs. What is true of the isolated bands is also true of the large body of Athapascans of the north. Wherever they come into contact with neighbouring tribes they have readily adopted their customs. Thus the Athapascan tribes of the Lower Yukon are to all intents and purposes Eskimo; those of the upper course of the Skeena River in British Columbia have adopted much of the coast culture; and those of the coast of Alaska have learned many of the arts and beliefs of their neighbours. The most southern groups of the Mackenzie Basin proper have adopted the customs of the Algonquin tribes. I do not think that this adaptability should be considered as a characteristic racial trait. It seems much more an effect of the lack of intensity of the old Athapascan culture. The same phenomenon is repeated among other tribes whose culture resembles that of the Athapascan. The Salish tribes of British Columbia and Washington and the Shoshonean tribes of the Western Plateaus of the United States have been affected by their neighbours in exactly the same manner. It would seem, from reports of older travellers, that Athapascan culture, comparatively speaking, uninfluenced by neighbouring tribes, may be found in the district west of Hudson Bay, and perhaps also on the upper courses of the western tributaries of the Mackenzie River.

Investigation of this simple culture must be considered as one of the most important problems of Canadian ethnology. Its importance lies in the probability that we may recognise in it an older type of American culture than the cultures observed on the prairies and in the eastern part of the United States.

From what little we know about this district, it seems likely that its culture may be similar to that of the Salish tribes of the interior of British Columbia, which are being thoroughly investigated by Mr. James Teit. A simple social organization, simplicity of industrial life, and what may perhaps be called a general individualistic tendency, seem to be common to both groups of tribes.

This tendency, combined with sparsity of population, with lack of great rituals which bring people together, and accompanied by a lack of strong artistic proclivities, seems to make these tribes susceptible to foreign influence.

There is little doubt that the Eskimo, whose life as sea-hunters has left a deep impression upon all of their doings, must probably be classed with the same group of peoples. The much-discussed theory of the Asiatic origin of the Eskimo must be entirely abandoned. The investigations of the Jesup North Pacific Expedition, which it was my privilege to conduct, seem to show that the Eskimo must be considered as, comparatively speaking, new arrivals in Alaska, which they reached coming from the east.

I must not leave the discussion of the significance of the culture of this whole district without referring, at least, to the important question of the relation between America and Asia. The Jesup North Pacific Expedition, the plans for which I suggested in 1897, was intended to contribute to the solution of this problem, and I think our investigators have succeeded in showing that there has been close contact between Siberia and the northern marginal area of America. I may be permitted to mention a few of the points which prove the existence of diffusion of culture throughout this territory. Many traditions have been found that are common to Siberia and the north-western part of the American Continent, reaching as far as northern California, the northern Prairies, and Hudson Bay. The treatment of birch-bark, the method of embroidering with reindeer and moose-hair, the forms of houses—all suggest long-continued intercourse. A consideration of the distribution, and the characteristics of languages and human types in America and Siberia, have led me to formulate the theory that the so-called Palae-Asiatic tribes of Siberia must be considered as an offshoot of the American race, which may have migrated back to the Old World after the retreat of the Arctic glaciers.

I have so far left entirely out of consideration one of the most difficult problems of Canadian ethnology—that of British Columbia. Nowhere in the Dominion is a like number of types and languages met with in so small an area; nowhere is found a culture of such strong individuality as in this region.

The fundamental features of the material culture of the fishing-tribes of the coast of north-eastern Asia, of north-west America, and of the Arctic coast of America, are so much alike that the assumption of an old unity of this culture seems justifiable, particularly since the beliefs and customs of this large continuous area show many similarities. These have been pointed out by Mr. Jochelson in his descriptions of the Koryak of the Okhotsk Sea. On this common basis a strongly individualized culture has originated on the coast of British Columbia, particularly among the Haida, Tsimshian, and Kwakiutl, which presents a number of most remarkable features, and is best exemplified by the style of art of this region, that has no parallel in any other part of our continent. At the same time some of the customs and beliefs of these people recall so strongly customs that are found only east of the Rocky Mountains, and again customs of the Melanesians that a highly interesting and difficult problem arises, which has so far baffled a

complete interpretation, notwithstanding the detailed investigations that have been conducted.

Let us turn now from the consideration of these geographical and historical problems to that of their bearing upon fundamental theoretical questions. In our previous discussions we made the tacit assumption, with which perhaps not all of you agree, that the culture of the tribes of our continent is a complex historical growth, in which by careful analysis the component elements may be segregated, and which in this way becomes historically intelligible. We started with the hypothesis that the ideas of a people depend upon the cultural elements handed down to them by their ancestors, upon additions to their knowledge based on their own experience, and upon ideas that they have acquired from their neighbours. Our hypothesis implies that ideas and activities of a people undergo fundamental changes due to complex causes.

We must recognize that this hypothesis does not exhaust the field of anthropological experience. Besides similarities due to obvious cases of borrowing, there are others that cannot be thus explained—similarities sometimes extending to minute details, which occur in regions widely separated. We believe that their occurrence is due to a psychological necessity, which brings about the appearance of certain groups of ideas and activities on certain stages of culture.

The phenomena here referred to have, however, given rise to the further hypothesis that these peculiar similar phenomena, which are not historically connected, arise by necessity whenever a tribe lives in the corresponding cultural conditions; and, furthermore, that these phenomena show us the sequence of all early cultural development the world over. So far as the theory assumes a psychological basis for similarities of ethnic phenomena in regions far apart, it seems to me incontrovertible; in so far as it assumes the necessary occurrence of this whole group of phenomena and their fixed sequence, I believe it is open to grave doubt.

An example will make the difference between these points of view clear. One of the striking features found among primitive people are the customs and beliefs which we are used to combining under the term "totemism." Totemism is found among many American tribes. In Canada it occurs among the eastern Algonquin, the Iroquois, and on the Pacific coast. It is often combined with maternal descent—with the custom of reckoning the child as a member of the mother's family, not as a member of the father's family. Totemism and maternal descent have existed in earlier times among many people where they have now disappeared, and a complete recurrence to these customs, after they have once been given up, is rare, and has never been observed in the history of the civilized world. From this it is inferred that totemism and maternal descent belong to an earlier period in the evolution of civilization, and have gradually been superseded by other forms of social organization and belief. While we may grant that this is the general course of events, the conclusion that totemism and maternal descent precede everywhere paternal descent and family organization does not seem to me necessary. The

tendency to their disappearance may exist everywhere; but this does not prove that they are a necessary stage in human development. They may never have existed in many parts of the world. The conditions in America are not at all favourable to the assumption of their omnipresence. The tribes which have the least complex culture, like those of the Mackenzie Basin, and which therefore would appear to be less developed, have paternal descent and no trace of totemism. Those that are socially and politically highly organized, like the tribes of the eastern part of the United States, have maternal descent and highly developed totemism. This has been proved by the investigations of Dr. John R. Swanton. Furthermore, I have tried to show that totemism and maternal descent have been adopted by tribes of British Columbia that were apparently in former times in a paternal stage. Mr. Hill-Tout later on confirmed some of my conclusions, and similar observations were made by Father Morice in the interior of British Columbia. The attempts to give a different interpretation to these facts, which have been made, for instance, by Breisig, do not seem convincing to me, because they start from the assumption that the unusual sequence of cultural forms is against the hypothetical general scheme of evolution.

It would seem that an acceptable general theory of the development of civilization must meet the demand that the historical happenings in any particular region conform to it. So far as I can see, the various theories of totemism all fail to do so, because they try to explain too much. To the student who delves into the depths of the thought of primitive man, without paying attention to theories, it becomes very soon apparent that the convenient term "totemism" covers a wide range of the most diverse ideas and customs, which are psychologically not at all comparable, but which have in common certain ideas in regard to incest groups—groups in which marriage is forbidden—and peculiar types of religious ideas. Where these ideas occur they tend to associate themselves, and are called "totemism." Where only the one or the other prevails, no totemism can develop. Therefore it seems that totemism may be viewed as a product of peculiar combinations of cultural traits that develop here and there.

I do not wish, however, to add a new theory to the many already existing. I merely wish to point out that, as long as the hypothetical sequence of events does not fit actual cases, the evolutionary scheme cannot be proved to represent the line followed by the whole of mankind.

On the other hand, the proof of dissemination of cultural elements seems to be incontrovertible. The sameness of Algonquin and Iroquois mythology, which Brinton derived from the psychic unity of their minds, is obviously due to borrowing. During the last fifteen years the process and extent of borrowing of myths has been studied in such detail in America, that no reasonable doubt can exist in regard to the gradual dissemination of tales from the Pacific Ocean to the Atlantic Ocean, from the Plateaus of Mexico to the Mackenzie River, and from the heart of Asia to Hudson Bay. No less convincing is the proof derived from the study of American decorative art, with its uniformity of style and its

multiplicity of interpretation. In short, it seems to my mind that the fact can no longer be ignored, that the ethnic life of even the most primitive tribe is a complex historical growth. With this, the necessity arises of making the attempt to unravel the historic process, and to verify our general theories by application to the historic evolution of each culture.

I wish to state once more that, in advocating this procedure, I do not mean to imply that no general laws of development exist. On the contrary, the analogies that do occur in regions far apart show that the human mind tends to reach the same results, not under similar, but under varying circumstances. The association of decorative art with symbolic introspection, that of social classification and religious belief, of material actions and magic results, of novelistic happenings and interpretations of nature, are among the fundamental tendencies common to humanity in the earlier stages of civilization. The problem that we have to solve is, on the one hand, the psychological one, how these fundamental tendencies come into existence, and the more specifically ethnological one, why they manifest themselves in various ways at different stages of culture.

I believe this is the anthropological problem that our time is called upon to solve. It has the most far-reaching influence upon the whole treatment of our science, and its investigation must be based on observations made in a region where dissemination can easily be traced. Conditions for this study are favourable wherever a number of distinct types of culture are in close contact, and still sufficiently distinct to allow us to recognize the peculiar traits of each. These conditions are remarkably well fulfilled in Canada. The Arctic coast, the Eastern Woodlands, the Prairies, the Plateau and Mackenzie area, and the Pacific coast, are so many districts sharply individualized, and still not segregated by insuperable barriers from the others. Therefore attempts to carry through a comparative analysis of neighbouring tribes is promising. I have referred briefly to some facts that seem suggestive, but the method of research here advocated may perhaps be further elucidated.

The Eskimo, who appear, on the whole, sharply differentiated from their neighbours, have nevertheless many traits in common with them. With the Chukchee and Koryak of north-eastern Asia they share almost all the fundamental inventions relating to the sea-hunt—the kayak, the boat, the harpoon, household utensils. Their pictographic art and their realistic carvings have the same style, which reaches its highest perfection among the Koryak. Certain rituals of the Eskimo and of these tribes are alike. Their hero-tales show similarities in type, and, to some extent, in detail. With their Athapascan neighbours the Eskimo have in common looseness of social organization; with both Athapascan and Iroquois, the concept of confession as a means of warding off the results of sin; that is, of the breaking of customary behaviour. With the Athapascan and northern Algonquin they share the occurrence of a peculiar type of animal fable, that, so far as I am aware, has not its like in any other part of America.

A number of specific tales can be traced from southern British Columbia to East Greenland and from Lake Superior to Smith Sound. To the former group belongs the tale of the blind man who recovered his eyesight by diving with a goose, and who then took revenge on his mother, who had maltreated him while he was blind; and the story of the being that robbed graves, and was overcome by a courageous youth, who, feigning death, had himself buried, was carried away by the monster, and finally escaped by the incidents known as "the magic flight." The characteristic feature of all these phenomena is their occurrence over continuous areas and their absence outside of this area. Indeed, the study of the component features in the culture of any given tribe must lay the greatest stress upon geographical continuity of occurrence; for, as soon as we admit in our proof the possibility of loss in intermediate districts, we might prove connection between all parts of the world. Continuity of distribution and a sufficient number of analogous elements in neighbouring cultures, seem, however, to justify the assumption of borrowing and mutual influences. Ample opportunity for such relations is given in the wars, trading relations, and intermarriages of tribes.

I may perhaps now be allowed to enumerate a few of the most obvious gaps in our knowledge of Canadian ethnology, which should be filled to enable us to conduct the searching analysis suggested. Among tribal monographs, those of the Athapaskan tribes of the Mackenzie, between Great Slave Lake and Hudson Bay, and that of the Algonquin tribes in the northern part of the Labrador Peninsula, seem to me the most urgently needed, because, as explained before, they are presumably the least affected types of northern marginal culture. In the west, the Kootenay are only little known, and the relation of the Tsimshian to their neighbours requires an exhaustive study. The Coast Salish and the Nootka of the west coast of Vancouver Island still offer important fields for detailed investigation.

In the field of Algonquin research we require a full record of the Gentile system of the tribes and of their rituals, particularly an inquiry into the essential characteristics of the Midi ceremonies; in the Athapaskan group, a detailed study of the complicated customs of avoidance and of the correlated intimacy, which, both in America and Siberia, always seem to go hand in hand, but have until recently escaped the attention of observers, because they are not as striking as the customs of avoidance.

In archæology one of our most important tasks must be the accurate determination of the most north-western extent of ancient pottery and an investigation of the prehistoric types of the Great Lake area to the present population of the same district. I may also point out here the need of an investigation of the shell heaps of Alaska in regard to the question whether a short-headed type preceded the present Eskimo, the only link that is lacking in closing the proof of the eastern origin of the Eskimo.

Most important appears a thorough and systematic study of Canadian languages, based on modern phonetic systems. While we suspect a relationship between Tlingit, Haida, and Athapaskan, and again between Salish and Wakashan,

this has not been proved yet. The relationship between these languages is a problem of fundamental importance.

I might go on with my enumeration, but enough has been said.

After the analysis of individual types of civilisation, here suggested, has been made, the problem of what constitutes the individuality of the culture of each tribe stands out with great clearness. The tenacious conservatism of the Eskimo, his inventiveness, his good nature, his peculiar views of nature, cannot be explained as resultants of borrowing, but appear as the outgrowth of his mode of life, and of the way in which he has remodelled the cultural materials transmitted to him by his forbears and by his neighbours.

I have dwelt so fully on this question, which is of fundamental importance for a right interpretation of ethnic phenomena, because Canada offers an exceptionally favourable field for the discussion. An exhaustive study of the types of culture and of their relations will show in how far we may be allowed to consider them as representatives of evolutionary types, or in how far the present conditions are the outgrowth of complicated historical happenings, in how far the widest generalisations of anthropology may be expressed in the form of sequences of beliefs and customs, or in how far they are rather psychological laws relating to the mental activities of mankind under conditions determined by the traditional views and attitudes found in different types of culture. Whatever our views may be in regard to these questions, their importance will be recognised by all. The opportunity to solve these theoretical questions, as well as the historical ones propounded before, is given. May we not hope that it may be seized upon, and that the aborigines of the Dominion may be studied before it is too late.

MISCELLANEA.

PROCEEDINGS OF THE ROYAL ANTHROPOLOGICAL INSTITUTE, 1910.

January 25th, 1910.

Annual General Meeting (see page 1).

February 8th, 1910.

Ordinary Meeting. Mr. J. GRAY, Treasurer, in the chair.

The election was announced of Miss C. BURNE, Miss E. NOEL, the Rev. F. MCCORMICK, Dr. J. S. MACKINTOSH, Professor ELLIOTT SMITH and Messrs. A. W. F. FULLER, B. J. HAINES and T. S. HARGREAVES as Ordinary Fellows of the Institute.

The affiliation of the Cambridge University Anthropological Club to the Institute was also announced.

Mr. A. L. LEWIS read a paper on "Some Dolmens of Peculiar Types in France and elsewhere," illustrated by lantern slides.

The paper was discussed by Dr. HOLDEN, Sir HENRY HOWORTH, Mr. R. SMITH, Mr. CALDERON, Dr. YOUNG, Mr. BAYNES, Mr. HAYES and the CHAIRMAN, and Mr. LEWIS replied.

Dr. J. SINCLAIR HOLDEN read a paper on "The Existence of a Palæolithic Bed beneath the Glacial Boulder Clay in South West Suffolk," illustrated by specimens.

The paper was discussed by Sir HENRY HOWORTH, Mr. BENNET, Mr. SMITH, Mr. WARREN and Mr. CALDERON, and Dr. HOLDEN replied.

February 22nd, 1910.

Ordinary Meeting. Sir RICHARD B. MARTIN, Vice-President, in the chair.

Miss M. E. DURHAM read a paper entitled "Notes on the Northern Albanians," illustrated by lantern slides and drawings.

The paper was discussed by Miss WERNER, Mr. CLODD, Mr. HYDE, Mr. LEWIS, Mr. TABOR and the TREASURER, and Miss DURHAM replied.

March 8th, 1910.

Ordinary Meeting. Sir HERBERT RISLEY, President, in the chair.

The election was announced of Dr. COLLIER, Major A. J. N. TREMEARNE and Captain T. W. WHIFFEN as Ordinary Fellows of the Institute.

The PRESIDENT, on taking the chair for the first time, inaugurated his office with a short speech.

Dr. KEITH read a paper on "The Gibraltar Skull," illustrated by lantern slides and specimens, including the subject of the paper.

The paper was discussed by Professor THANE, Dr. WRIGHT, Dr. SHRUBSALL, Dr. PARSONS, the TREASURER, Professor PATTEN and the PRESIDENT, and Dr. KEITH replied.

April 12th, 1910.

Ordinary Meeting. Sir HERBERT RISLEY, President, in the chair.

The PRESIDENT called attention to the new epidiascope lantern purchased out of the bequest of the late Miss WOLFE.

Mr. S. H. WARREN read a paper on "Charcoal-burning in Epping Forest," illustrated by lantern slides.

The paper was discussed by Prof. RIDGEWAY, Miss FREIRE-MARRECO and the PRESIDENT.

Mr. ROBARTS read a paper by himself and Mr. H. C. COLLYER, entitled "Additional Notes on the Excavations on the Site of the British Camp at Wallington," illustrated by lantern slides and specimens.

Mr. COLLYER, joint author of the paper, also spoke.

The paper was discussed by Prof. RIDGEWAY, Mr. S. H. WARREN and the PRESIDENT, and Mr. ROBARTS replied.

April 26th, 1910.

Ordinary Meeting. Sir HERBERT RISLEY, President, in the chair.

The election was announced of Messrs. J. E. FRIEND-PEREIRA, H. W. GARBUTT, E. GREENING and E. WESTLAKE as Ordinary Fellows of the Institute.

Mr. PHILIP NORMAN exhibited a number of ethnographical specimens from Sierra Leone and Liberia.

Mr. MURRAY JONES read a paper on "The Religion and Mythology of the Lengua Indians of the Paraguayan Chaco," illustrated by lantern slides and specimens.

May 31st, 1910.

Ordinary Meeting. Sir HERBERT RISLEY, President, in the chair.

The election was announced of Mr. J. GREAVES as an Ordinary Fellow of the Institute.

Dr. R. THURNWALD read a paper on an expedition to the Solomon Islands, illustrated by lantern slides and phonograph records.

The paper was discussed by Dr. RIVERS, Dr. SELIGMANN, Mr. WHEELER, Prof. STARR and the PRESIDENT. The lecturer made a short reply.

June 14th, 1910.

Ordinary Meeting. Prof. W. GOWLAND, ex-President, in the chair.

The election was announced of Mr. GASTRELL PHILLIPS as an Ordinary Fellow of the Institute.

Mr. P. A. TALBOT read a paper on "The Ekoi of Southern Nigeria," illustrated by lantern slides and sketches.

The paper was discussed by Dr. SELIGMANN, Mr. E. TORDAY, Mr. LEWIS and the CHAIRMAN, and Mr. TALBOT replied.

June 28th, 1910.

Ordinary Meeting. Sir HERBERT RISLEY, President, in the chair.

The election was announced of Dr. ATKEY, Mr. P. BRAMLEY, I.C.S., Dr. HILL JONES, Mr. HARRIS, I.C.S., and Miss VELLENOWETH as Ordinary Fellows of the Institute.

Mr. W. J. LEWIS ABBOTT read a paper entitled "A Classification of the British Stone Age, some little-known Origins and Cultures," illustrated by specimens and lantern slides.

The paper was discussed by Dr. **SALTER**, Mr. **KENNARD**, Mr. **KENWORTHY**, Mr. **CARTER**, Mr. **WARREN**, Mr. **GRIST**, Mr. **PARKYN**, Mr. **TABOR** and the **PRESIDENT**, and Mr. **ABBOTT** replied.

November 15th, 1910.

Ordinary Meeting. Sir **HERBERT RISLEY**, President, in the chair.

The election was announced of Captain **R. G. ANDERSON**, Mr. **M. W. H. BEECH**, Miss **B. CHAMBERS**, Messrs. **G. HEIMBROD**, **R. L. Y. JONES**, **H. S. KINGSFORD**, **B. MALINOWSKI**, Mrs. **MILNE**, Mr. **W. J. PERRY**, Prof. **W. J. SOLLAS**, Messrs. **R. CAMPBELL THOMPSON** and **S. H. WILLIAMS**.

The **PRESIDENT** then invited Prof. **RIDGEWAY**, ex-President, to take the chair, and delivered a lecture on "The Castes of Eastern Bengal," illustrated by the epidiascope.

The paper was discussed by the **CHAIRMAN**, Dr. **SHRUBSALL**, Mr. **LONGWORTH DAMES**, Dr. **SELIGMANN**, Mr. **PARKYN** and Dr. **SMURTHWAITE**, and the **PRESIDENT** replied.

November 29th, 1910.

Ordinary Meeting. Sir **HERBERT RISLEY**, President, in the chair.

Dr. **A. KEITH** read a paper on "Certain Physical Characters of the Negroes of the Belgian Congo and Nigeria," illustrated by lantern slides and specimens.

Mr. **A. K. NEWMAN** of Wellington, New Zealand, read a paper on "The Search for the Origin of the Maori," illustrated by the epidiascope.

The paper was discussed by Messrs. **S. H. RAY**, **EDGE-PARTINGTON**, **LONGWORTH DAMES** and the **PRESIDENT**, and Mr. **NEWMAN** replied.

December 13th, 1910.

Ordinary Meeting. Dr. **ARTHUR J. EVANS**, Vice-President, in the chair.

The election was announced of Prof. **EUGENE PITTARD** as an Honorary Fellow of the Institute.

The election was announced of Messrs. **HAROLD HOLMES** and **R. MURRAY** as Ordinary Fellows of the Institute.

The **CHAIRMAN** announced that the **PRESIDENT** had appointed Messrs. **R. H. PYE** and **O. M. DALTON** as Auditors of the Institute's accounts.

Mr. **R. CAMPBELL THOMPSON** read a paper on "Some Unexplored Routes between Angora and Eregli," illustrated by lantern slides.

The paper was discussed by the **CHAIRMAN**, Mr. **H. R. HALL** and Mr. **A. L. LEWIS**.

The following have been elected Fellows of the Institute between January, 1910, and 30th March, 1911 :—

Year of
Election.

- 1910 Anderson, Captain R. G., R.A.M.C., c/o *The War Office, Egyptian Army, Cairo.*
- 1910 Atkey, Oliver, Esq., M.D., *Port Sudan ; Cleveland, Wimbledon.*
- 1910 Beech, M. W. H., Esq., M.A., Assistant District Commissioner, *British East Africa Protectorate.*
- 1910 Bramley, Percy B., Esq., c/o *Thos. Cook & Sons, Ludgate Circus, E.C.*
- 1910 Burne, Miss C. S., 5, *Iverna Gardens, Kensington, W.*
- 1910 Chambers, Miss B. A., *Glyn-y-Mel, Fishguard.*
- 1910 Collier, H. S., Esq., M.D., 57a, *Wimpole Street, W.*
- 1911 Edwards, Francis, Esq., *Davenham, Northwood, Middlesex.*
- 1910 Friend, Pereira J. E., Esq., *Goalpara, Assam, India.*
- 1910 Fuller, A. W. F., Esq., 7, *Sydenham Hill, S.E. **
- 1910 Garbutt, H. W., Esq., *P.O. Box 181, Bulawayo.*
- 1910 Haines, B. J., Esq., *Travancore House, Pewsey.*
- 1911 Hamilton-Grierson, Sir Philip, 7, *Palmerston Place, Edinburgh.*
- 1910 Hargreaves, T. S., Esq., 20, *Bloomsbury Square, W.C.*
- 1910 Heimbrod, G., Esq., *P.O. Nadi, Fiji, via Lautaka.*
- 1910 Holmes, Harold, Esq., *Cherryford-in-Martinhoe, Parracombe, N. Devon.*
- 1910 James, Rev. W. Cory, M.A., *East Grove, Rhayader, Radnorshire.*
- 1910 Jones, F. W., Esq., *St. Thomas' Hospital, S.W.*
- 1910 Kingsford, H. S., Esq., M.A., 60, *The Common, Upper Clapton, N.E.*
- 1911 Kidd, A. E., Esq., M.D., *School Board Offices, Dundee.*
- 1911 Lyde, L. W., Esq., M.A., F.R.G.S., Professor of Economic Geography, *University College, London.*
- 1910 McCormick, Rev. F., M.R.A.S., F.S.A. (Scot.), *Wrockwardine Wood Rectory, Wellington, Salop.*
- 1910 Mackintosh, J. S., Esq., *Platt's Lane, Hampstead, N.W.*
- 1910 Malinowski, B., Esq., 30, *Guilford Street, W.C.*
- 1910 Milne, Mrs. M. L., *Hill House, Victoria Park, Manchester.*
- 1910 Murray, Reginald, Esq., 12, *Bedford Row, W.C.*
- 1910 Noel, Miss Emilia F., 37, *Moscow Court, W.*
- 1910 Perry, W. J., Esq., *Pocklington School, E. Yorks.*
- 1910 Phillips, J. Gastrell, Esq., *Barnwood, near Gloucester.*
- 1911 Smallbones, R. T., Esq., c/o *The Foreign Office, Whitehall, S.W. ; The Isthmian Club, Piccadilly, W.*
- 1910 Smith, G. Elliott, Esq., M.A., M.D., F.R.S., Professor of Anatomy, *The University, Manchester.*

* Compounding Fellow.

- 1910 Sollas, W. J., Esq., M.A., Sc.D., LL.D., F.R.S., Professor of Geology in the University of Oxford, 173, *Woodstock Road, Oxford*.
- 1910 Thompson, R. Campbell, Esq., M.A., F.S.A., F.R.G.S., 13, *Cheyne Gardens, Chelsea, S.W.*
- 1911 Thurston, Edgar, Esq., C.I.E., *Cumberland Lodge, Kew*.
- 1910 Tremearne, Major A. J. N., B.A., *Tudor House, Blackheath Park, S.E.*
- 1910 Vellenoweth, Miss L., 41, *Knatchbull Road, Camberwell, S.E.*
- 1911 Waddell, A. B., Esq., M.D., *Roseland, Baldock, Herts.*
- 1910 Westlake, Ernest, Esq., F.G.S., *Fordingbridge, Salisbury*; 31, *Market Place, Salisbury*.
- 1910 Whiffen, Captain T. W., *United Service Club, S.W.*; *Ardwick, Sussex*.
- 1911 Williams, M. Bruce, Esq., *Green Hurst, Beaconsfield*.
- 1910 Williams, S. H., Esq., L.D.S., R.C.S., 8, *Warrior Square, St. Leonards-on-Sea*.

Affiliated Members.

- 1910 Casson, S., Esq., *Lincoln College, Oxford*.
- 1910 Horton, E. A., Esq., *University College, Oxford*.
- 1910 Huckaly, G. C., Esq., 7, *Southmoor Road, Oxford*.

The following Fellows of the Institute have died or resigned their Fellowship between January, 1910, and April, 1911.

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| 1906 Bland, Mrs. | 1901 Letts, C., Esq. |
| 1909 Cook, A. B., Esq., M.A. | 1902 Martin, E. F., Esq. |
| 1908 Crawford, T. W. W., Esq., M.D. | 1901 Mitchell, A., Esq., M.D., M.C. |
| 1905 Davis, Mrs. Edward. | 1907 Mott, F. W., Esq., M.D., F.R.S. |
| 1902 Edgar, P. G., Esq., M.B., Ch.M. | 1904 Orr, Captain C. W. J., R.A. |
| 1866 Fischer, Robert, Esq., B.L.* | 1863 Pusey, S. E. B. Bouverie, Esq.,
F.R.G.S. |
| 1906 Fletcher, Miss G. | 1908 Rodin, Paul, Esq. |
| 1862 Galton, Sir Francis, M.A., D.C.L.,
F.R.S., F.G.S., F.R.G.S., Past
President (1885-9). | 1904 Sewell, R. B. Seymour, Esq.,
B.A. |
| 1908 Goodman, S. C. N., Esq. | 1866 Skues, Deputy-Surgeon-General
F. M., M.D. |
| 1910 Harris, L. T., Esq. | 1907 Stewart, James, Esq. |
| 1899 Hobson, Mrs. Carey. | 1903 Swinhoe, R. C. J., Esq. |
| 1903 Hocken, T. M., Esq. | 1863 Wake, C. S., Esq. |
| 1899 Lawrence, G. F., Esq. | |

Affiliated Members.

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|---------------------------|--|--------------------------|
| 1910 Barbeau, C. M., Esq. | | 1909 Wallis, W. D., Esq. |
|---------------------------|--|--------------------------|

* Compounding Fellow.

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